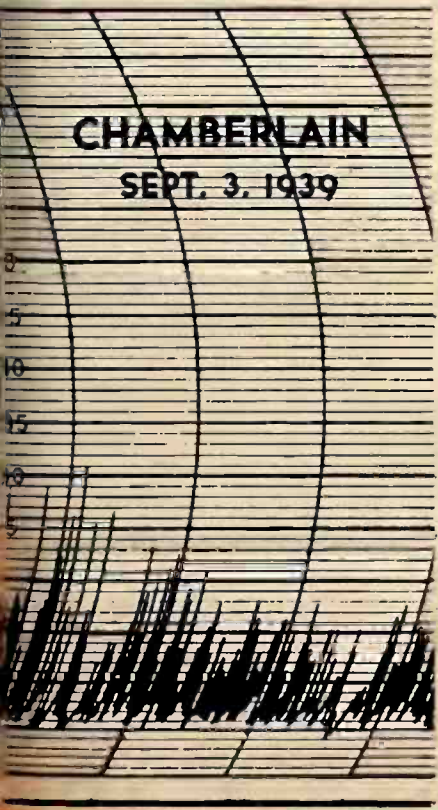


RADIO *and Television* TODAY

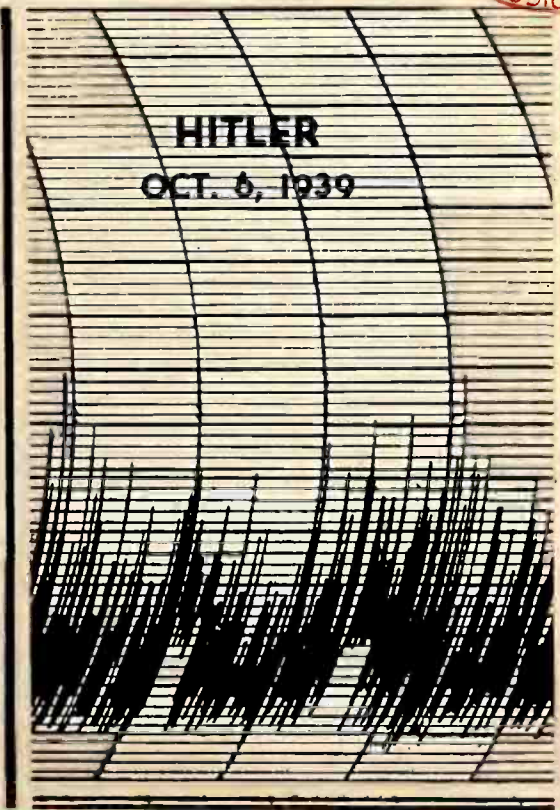


LIBRARY OF CONGRESS
NOV - 6 1939
PERIODICAL DIVISION

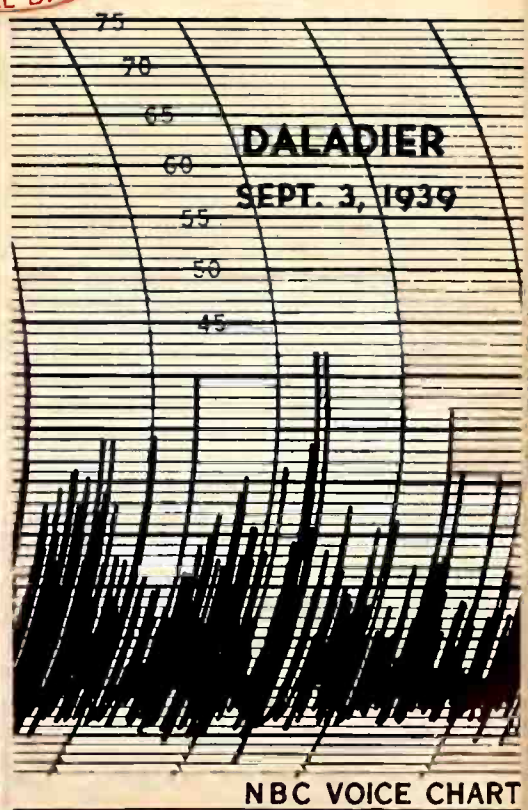
CHAMBERLAIN
SEPT. 3, 1939



HITLER
OCT. 6, 1939



DALADIER
SEPT. 3, 1939



NBC VOICE CHART

Programs that Help You Sell Radios III—European Broadcasts Standard and Shortwave p. 14

SELLING SOUND

OCTOBER

P. R. MALLORY & CO., Inc. MALLORY

Replacement Condensers Have Captured the Country . . .

Thousands of service men from coast to coast have already found for themselves the time saving . . . profit building possibilities of these new Mallory Condensers.

Once again Mallory's policy of unstinting

investment in development work has been justified. Every condenser replacement need is adequately covered because the line has been built around an exhaustive study of millions of condensers now in use as original equipment.

No Condenser Line gives you wider replacement possibilities

For example—with over 50 ratings to choose from . . . with common anode, common cathode and separate sections too . . . Mallory Tubular Condensers fill your every need and give the first satisfactory answer to the problem of replacement for inexpensive compact receivers. Recognizing the universality of multiple separate section units

. . . they have been included in the line wherever size permits. Each condenser is attractive, neat, permanently marked and definitely sealed against humidity and moisture. Flexible six inch leads and exclusive mounting features make installation simple. Your Mallory-Yaxley distributor will give you immediate service. Put yourself in line for bigger profits. Order NOW!



A—Units of larger diameter supplied with self-contained feature for universal mounting . . . either vertical or horizontal. All leads at one end.

B—Supplied with simple adjustable strap for horizontal mounting. Insulated leads at both ends.

C—These are provided with bare wire leads at both ends. Because of their small size, no mounting feature is required.

Use
P. R. MALLORY & CO., Inc.
MALLORY
REPLACEMENT
CONDENSERS . . . VIBRATORS

P. R. MALLORY & CO., Inc.
INDIANAPOLIS INDIANA
Cable Address—PELMALLO

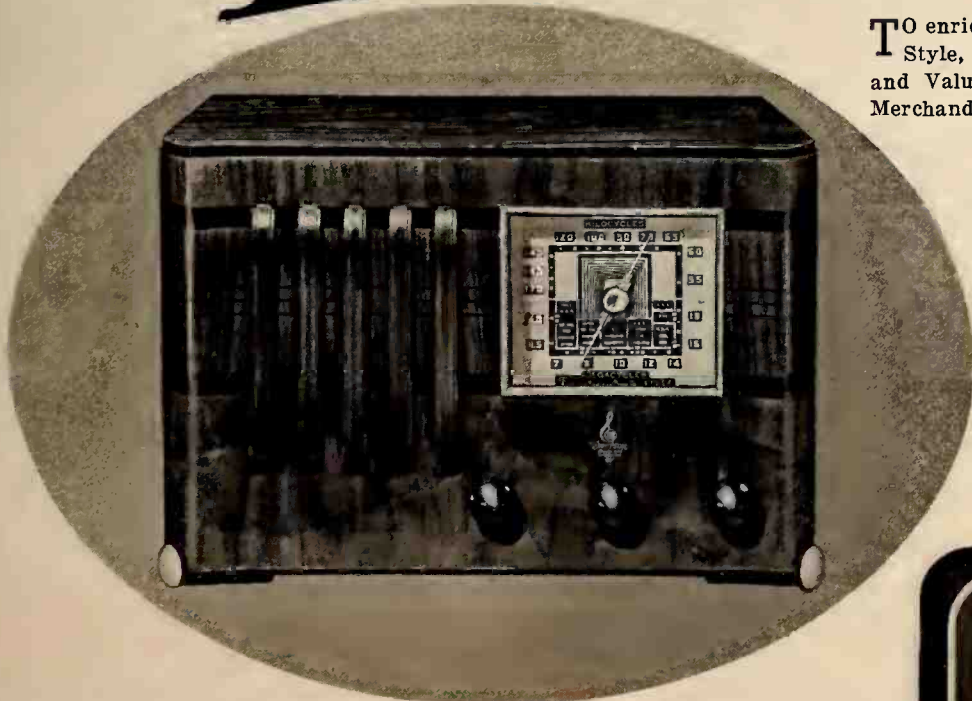
Use
YAXLEY
REPLACEMENT
VOLUME CONTROLS

In the *QUALITY* Tradition . . .
as *IDEAL GIFTS* . . .



Emerson

. . . presents *Two New Groups of Sensational Sets*



MODEL CS-320—With "MIRACLE TONE CHAMBER" Designed for Televison—6 Tubes and Ballast. AC-DC Superheterodyne. American, Foreign and Police—Short Wave Band, 16 to 54 Meters (5.6 to 18, mc.); Standard Broadcasts & Police, 173 to 555 Meters (540 to 1,730 kc.). 6½" Electro Dynamic Speaker. Exquisite cabinetry of selected butt and striped walnut in "Staybent" Construction. Hand-rubbed finish. **\$29⁹⁵**

TO enrich a line that is already supreme in Style, Tone, Engineering, Performance and Value . . . to give an extra Holiday Merchandising impetus to the dealer business . . . EMERSON has just produced **TWO** new groups of ultra-**QUALITY** sets—a selection of Table Models in Ingraham cabinets and an entirely **NEW** series of "3-WAY" receivers with **EXCLUSIVE** innovations in design, color, performance and price. Ask for large color broadside describing these new models.



An Entirely New Design in "3-WAY" RADIO
Choice of Colors . . . Complete \$24⁹⁵ . . . !

MODEL DJ-310—With "MIRACLE TONE CHAMBER." Plays on House Current—AC or DC—Also Plays on Batteries. Completely automatic error-proof power change-over—batteries cannot be accidentally discharged. 6-Tube Superheterodyne. Standard American Broadcasts. 5" Permanent Magnet Dynamic Speaker. Automatic Volume Control. Inner-Ceptor Loop Antenna. Economical operation through use of new "Mini-Max" battery. Compact and attractive. Available in Blue with Ivory; Ivory with Brown; or Pigskin.



Another Emerson Innovation . . . the

"Re-Flex Miracle Tone Chamber"

Acoustically perfect—an entirely new style!

MODEL DB-315—5-Tube AC-DC Superheterodyne. Standard American Broadcasts. 5" Electro Dynamic Speaker. Automatic Volume Control. Inner-Ceptor Loop Antenna. Cabinet of selected matched butt walnut. Curved ends carried out by Emerson's "Staybent" construction. Has telescoping carrying handle. Hand-rubbed finish. **\$19⁹⁵**

Ask your Emerson distributor for details of the Emerson 1940 Line—63 Great Models from \$7.95 to \$99.95

EMERSON RADIO AND PHONOGRAPH CORPORATION • NEW YORK, N. Y.
World's Largest Maker of Small Radios

RADIO & TELEVISION TODAY, Oct., 1939, Vol. V, No. 10 published monthly by Caldwell-Clements, Inc., 480 Lexington Ave., New York, N. Y. Subscription price U. S. and Latin American countries, \$1.00 for 2 years; Canada: \$1.25 for 2 years. All other countries, \$2.00 for 2 years; single copy, 15c. Reentered as second class matter April 29, 1939, at the post office at New York, N. Y., under the act of March 3, 1879. Originally entered as second class July 24, 1936. Printed in U.S.A. Member of A. B. C. Copyright 1939 by Caldwell-Clements, Inc.

RED HOT!

5 MORE WITH



THE "BIG EIGHT"

- Wired for television sound
 - High-efficiency built-in antenna
 - Magic Keyboard automatic tuning
 - Full 12-inch concert speaker
 - 3-Gang tuning condenser
 - 8 Watts output
 - 3 Wave bands
 - 8 Working tubes—9-tube performance
 - Manual selectivity control
 - Automatic bass compensation
 - Automatic volume control
 - 3-Position tone control
 - Connection for record player
 - Massive cabinet of fine wood hand-rubbed to mirror finish
- Priced . . . at a profit for you!*

YEAR AFTER YEAR, Stewart-Warner gives you the big "firsts" that make Stewart-Warner dealers the center of radio news. Stewart-Warner gave you the FIRST long and short wave chassis in a single unit—the FIRST Magic Dial calibrating a single control for long and short waves—the FIRST Magic Keyboard for automatic tuning—the FIRST real midgets—the FIRST newly-styled smart plastics—the FIRST plastic with natural wood-grain finish—the FIRST radios with television jacks—the FIRST color radios in school colors—the FIRST Dionne Qu controls for normal operation outside and inside! Cash in with Stewart-Warner "fr



THE "BATTERY STREAMLINER"

- Powered by long-life batteries
 - 7-Tube performance superhet
 - Latest type low-drain tubes
 - Dust-proof 8-inch permanent-magnet dynamic speaker
 - High finish streamline cabinet of hand-rubbed walnut
 - Requires only one 1.5 "A" and two 45-volt batteries
- Priced . . . at a profit for you!*

STEWART-WARNER CORPORATION • CHICAGO, ILLINOIS

STEWART-WARNER VALUES

REAL PROFIT FOR YOU!

RIGHT off the griddle—and red hot news! Five more Stewart-Warners with the year's biggest radio feature—a real profit for the dealer who sells them! They have all the Stewart-Warner features that make sets move—the super-value that wins sales in any competition—the styling and power and selectivity and tone that distinguish Stewart-Warner design from the field. AND—they're priced to move... without taking the difference out of your pocket! Priced to move... and pay you a better profit for moving them! That's why thousands of dealers this year are making Stewart-Warner their bread-and-butter line, and putting extra dollars in the bank. That's why they'll welcome these five additional Stewart-Warners in the 1940 Silver Dollar line. Get the facts from your Stewart-Warner Distributor—and you'll get a new slant on what the radio business offers you too.



AC-DC-BATTERY PORTABLE

... where uses bat-
... the move—plugs in
... at home
... antenna
... tubes give 7 to
... performance

- Covers 540-1600 kilocycles
 - Permanent-magnet dynamic speaker
 - Weatherproof luggage-fabric case
- Priced... at a profit for you!



COMPANION, Jr.

... portable for price"
... low drain tubes
... performance
... antenna
... circuit

- Permanent-magnet dynamic speaker
 - Weatherproof luggage-fabric case
- Priced... at a profit for you!



SUPER-SIX CONSOLE

- Wired for television sound
- High-efficiency built-in antenna

- Magic Keyboard automatic tuning
 - 6 Working tubes—8-tube performance
 - Big 10-inch concert speaker
 - Gets broadcasts, police calls and foreign short wave
 - Automatic bass compensation
 - Automatic volume control
 - 3-Position tone control
 - Connection for record player
 - Hand-rubbed cabinet with figured walnut wrap-over control panel
- Priced... at a profit for you!

Get full details from your Stewart-Warner distributor now!

RED HOT 5 MORE STEWART-WARNER VALUES WITH REAL PROFIT FOR YOU!

YEAR-AFTER-YEAR, Stewart-Warner gives you the big "firsts" that make Stewart-Warner dealers the center of radio news. Stewart-Warner gave you the **FIRST** long and short wave combination in a single unit—the **FIRST** Magic Dial controlling a single knob for long and short waves—the **FIRST** Magic Keyboard for automatic tuning—the **FIRST** real widgets—the **FIRST** newly-styled smart plastics—the **FIRST** with natural wood grain finish—the **FIRST** radios with telescopic jacks—the **FIRST** Dime Queen radios in school colors—the **FIRST** Disc Queen radio—the **FIRST** radio-phonograph with controls for normal operation outside and inside! Cash in with Stewart-Warner "firsts"!



THE "BIG EIGHT"

- World for time-band spread
- High efficiency built-in antenna
- Magic Keyboard for automatic tuning
- Full 12-inch coil-in speaker
- 3 Gong tuning condenser

- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance

Priced at a profit for you



THE "BATTERY STREAMLINER"

- Powered by 6-Cell battery
- 7-Tube performance

- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance

RIGHT off the griddle—and red hot news! Five more Stewart-Warner values with the year's biggest radio feature—a real profit for the dealer who sells them! They have all the Stewart-Warner features that make sets move—the super-value that wins sales in any competition—the styling and power and selectivity and tone that distinguish Stewart-Warner design from the field. **AND**—they're priced to move... without taking the difference out of your pocket! Priced to move... and pay you a better profit for moving them! That's why thousands of dealers this year are making Stewart-Warner their bread-and-butter line, and putting extra dollars in the bank. That's why they'll welcome these five additional Stewart-Warner sets into their stores. Get the facts from your Stewart-Warner Distributor—and you'll get a new slant on what the radio business offers you too.



AC-DC-BATTERY PORTABLE

- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance



COMPANION, Jr.

- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance
- 7-Tube performance



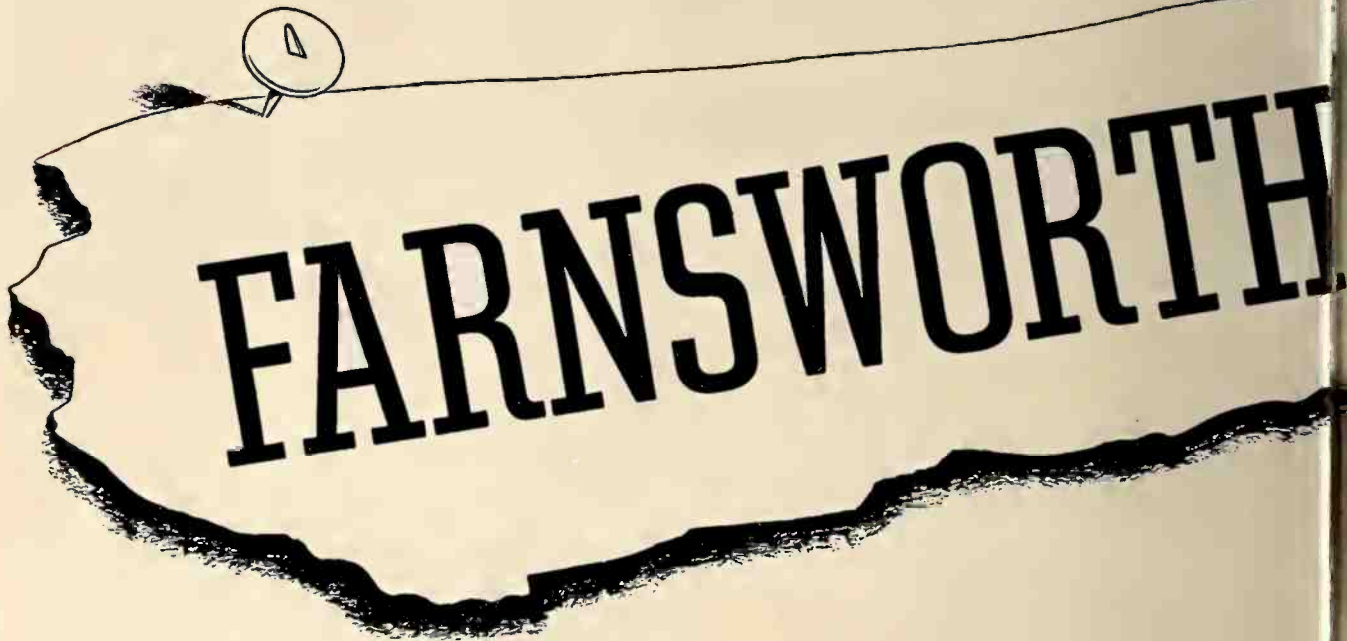
SUPER-SIX CONSOLE

- 7-Tube performance
- 7-Tube performance
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- 7-Tube performance
- 7-Tube performance
- 7-Tube performance

STEWART-WARNER CORPORATION • CHICAGO, ILL. 60605

Get full details from your Stewart-Warner Distributor

Make the week of October 23rd



The national announcement of the Farnsworth line is the biggest news in radio for many years. Plan *now* to tie-up with this public announcement by making the week of October 23rd "*Farnsworth Week*" in your store!

**"THE GREATEST NAME IN TELEVISION IS THE
NEWEST NAME IN RADIO"**

Millions of families will be reading this message in *The Saturday Evening Post* . . . the thrilling story of America's television genius, Philo T. Farnsworth. They will see sales-arousing pictures of beautiful Farnsworth consoles, combinations, table models, portables . . . created by Farnsworth television engineers . . . every model a really competitive value.

**FARNSWORTH PUTS REAL PROFIT INTO THE
RADIO BUSINESS**

Thousands of orders are pouring in to the Farnsworth factories, because progressive dealers know a good deal and a good buy when they see one.

Low list prices meet all competition . . . yet are carefully figured to give YOU a longer margin of profit.

It is a *complete* non-conflicting line . . . every type of set for every type of customer. And every model has a "buy me" price tag on it.

HOW TO CASH IN—Here's the way to get every dollar of profit out of that sensational public announcement in the October 28th issue of *The Saturday Evening Post*.

1 See your Farnsworth distributor, get proofs of *The Saturday Evening Post* ad to put up in your windows on Monday morning, October 23rd—break the news in your neighborhood before the magazine reaches the stands. Let people know your store is headquarters for the great new Farnsworth Radio.

2 Display several proofs of the ad—they will help you sell.

3 Be sure your salesmen have plenty of Farnsworth literature to help them close more sales.

4 A representative line of Farnsworth Radios in your windows will be a real traffic stopper. And a special Farnsworth section on your floor will attract crowds to your radio department.

5 Increase the effectiveness of your own newspaper advertising by featuring the Farnsworth Radio *during this week of point interest*.

6 See your Farnsworth distributor *now*. Let your "*Farnsworth Week*" make more money for you.

FARNSWORTH TELEVISION & RADIO CORPORATION, FORT WAYNE AND MARION, INDIANA

WEEK

Capitalize on this smashing
double-page announcement
in The Saturday Evening Post



◀ Here's the knock-out, big-demand item of the season—radio-phonograph combination (AK-59). Note the richly grained woods in the beautifully proportioned cabinet. 7 tubes, 2 wave bands, automatic volume control, Built-In-Tenna, 5-station push-button tuning, 12-inch electro-dynamic speaker. Phonograph with Capehart automatic record changer. Television-sound connection. Your customers will sell themselves when they hear it and learn its unbelievably low price.

Just look at this super-value console (AC-70) illustrated here. ▶ Note the superbly figured, classically designed cabinet. 8 tubes, 3 wave bands, Flo-Lite dial, 6-station push-button tuning, built-in, rotatable loop antenna, automatic volume control, 12-inch electro-dynamic speaker, phonograph and television-sound connection. An outstanding Farnsworth value . . . at a list price that will "go to town" for you, and with a profit margin that really rings the cash register.



Make the week of October 23rd

FARNSWORTH

The national announcement of the Farnsworth line is the biggest news in radio for many years. Plan now to tie-up with this public announcement by making the week of October 23rd "Farnsworth Week" in your store!

"THE GREATEST NAME IN TELEVISION IS THE NEWEST NAME IN RADIO"

Millions of families will be reading this message in *The Saturday Evening Post* . . . the thrilling story of America's television genius, Philo T. Farnsworth. They will see sales-arousing pictures of beautiful Farnsworth consoles, combinations, table models, portables . . . created by Farnsworth television engineers . . . every model a really competitive value.

FARNSWORTH PUTS REAL PROFIT INTO THE RADIO BUSINESS

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Low list prices meet all competition . . . yet are carefully figured to give YOU a longer margin of profit.

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- 4 A representative line of Farnsworth Radios in your windows will be a real traffic stopper. And a special Farnsworth section on your floor will attract crowds to your radio department.
- 5 Increase the effectiveness of your own newspaper advertising by featuring the Farnsworth Radio during this week of peak-point interest.
- 6 See your Farnsworth distributor now. Let your "Farnsworth Week" make more money for you.

WEEK



Capitalize on this smashing double-page announcement in *The Saturday Evening Post*



Here's the knock-out, big-demand item of the season—radio-phonograph combination (AK-50). Note the richly grained woods in the beautifully proportioned cabinet. 7 tubes, 2 wave bands, automatic volume control, Blit-in-Tenna, 5 station push-button tuning, 12-inch electro-dynamic speaker, Phonograph with Crap-hart automatic record changer. Television sound connection. Your customers will sell themselves when they hear it and learn its unbelievably low price.



Just look at this super-value console (AC-70) illustrated here. Note the superbly figured, classically treated cabinet. 8 tubes, 2 wave bands, Flo-Lite dial, 6-station push-button tuning, built-in, rotatable loop antenna, automatic volume control, 12-inch electro-dynamic speaker, phonograph and television-sound connection. An outstanding Farnsworth value . . . at a list price that will "go to town" for you, and with a profit margin that really rings the cash register.

ANOTHER Majestic SCOOP!

As Advertised in
Saturday Evening Post, Oct. 28, 1939
Collier's, Nov. 11, 1939



**LOW PRICE OF NEW
1940
Majestic
RADIO
AMAZED ME!**



**AMERICAN and FOREIGN
RECEPTION! . . .
With All These Features**

- TWO Wave-bands!—gets all standard U.S., foreign, ships and amateur broadcasts!
- Plays on AC or DC.
- Smart new styling; walnut or ivory plastic cabinet.
- Automatic Volume Control and Tone Control.
- A price that's lower than many sets that get American broadcasts only!

**The Hottest 2-Wave-Band Set In The Industry . . .
Backed By Smashing National Advertising!**

Here's just another example of why the experienced, shrewd merchandisers are saying: "Majestic's the line to ride hard!" Here's a set with flawless plastic design—exceptional tone—two wave bands covering standard U.S., foreign, ships, amateur—a price that astounds customers! There's a real profit in it for you—and Majestic is selling this set for you and selling it hard! Week after week Majestic ads in the Post, Life, Collier's and others are featuring hot numbers you can move, at a profit! Order 2-wave-band item (model 2D60) and other hot numbers now!

MORE PROVEN HOT SELLERS



PLASTIC BEAUTY WINNER
—A little beauty; in walnut or ivory, available with or without push button tuning. 6-tube (including ballast) superheterodyne. No aerial; no ground; 538-1720 kc. Models 2501, 250W, 250MI and 250MW.



Miniature Broadcasting Station—Plays records through radio or own 4-tube phonograph oscillator amplifier; 4-inch electro-dynamic speaker, constant speed synchronous motor. No wires. Model 4PWO.



Automatic Record-Changing 6-Tube Combination—Plays 10-inch and 12-inch records inter-mixed; automatic start and stop. 2 bands: 538-1720 kc. and 6.8, 18.6 mc. No aerial, no ground; many other Majestic advancements. Model 2C60P.

Majestic
MIGHTY MONARCH OF THE AIR

Majestic Radio & Television Corp.,
2602 W. 50th St., Chicago, Illinois.
Cable Address: "Majestic, Chicago."

8 MILLION SATISFIED OWNERS OF OLD Majestics ARE RED-HOT PROSPECTS FOR NEW MAJESTICS

RUSSIA

RAYTHEON TUBES

HELP Correct THE MAP OF the World!

FINLAND

Unexplored

NORTH
POLE

Unexplored

CROCKER
LAND

GREENLAND

C. J. MacGregor



Receivers and Transmitters, Equipped with Raytheon Tubes, Play an Important Part in the Work of the MacGregor Arctic Expedition.

When Commander Peary returned from his unsuccessful dash to the North Pole in 1906, he reported the existence of an island that has since been indicated on all Arctic maps as Crocker Land.

But when Capt. MacGregor led his scientific expedition into the Arctic, he flew over 100,000 square miles of Arctic territory without finding a sign of the so-called Crocker Land.

Thus the map of the world is changed—with the efficient assistance of RAYTHEON tubes. For Capt. MacGregor's Transmitters and Receivers, through which he maintained daily contact between airplane and base camp and with the U.S. Weather Bureau in Washington, D. C., were all equipped with dependable RAYTHEONS!

Where lives are at stake and cost is no factor you will invariably find RAYTHEONS!

And yet, you can give this same dependable service to your customers—without a penny more cost than the second best tube!

The new RAYTHEON price policy takes the sales resistance out of the tube replacement business and greatly increases your turnover without sacrificing the profits to which you are entitled.

Ask your RAYTHEON Jobber TODAY!

DOMINION
OF CANADA



RAYTHEON

NEWTON, MASS. • NEW YORK • CHICAGO • SAN FRANCISCO • ATLANTA

"WORLD'S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS"

OCTOBER, 1939



CROSLLEY 599A
Operates AC-DC current. No ground. Carry it anywhere. Etched dial. Unusually clear tone. Brown bakelite case \$7.99. Colored cabinets slightly higher. Other table models \$9.99 to \$29.95.



7 TUBE SUPERHET 719A
Illuminated slide rule type dial, new improved push buttons, unmatched at \$19.99. Foreign wave band added at slightly higher price. Other deluxe table models \$24.95 and \$29.95.



12-tube. PORTABLE B-549A
Operated with AC-DC current or batteries. Automatic switch changes over. Light weight, carry it anywhere. \$24.95 WITH BATTERIES GOOD FOR 200 hours or better.



CONSOLE 7739M
7 tube Superhet with NEW CURVE-FLECTOR tone diffuser and improved push button tuning. Domestic broadcast and short-wave for foreign reception. Cabinet imparts rich quality from finely selected woods. A real value at \$49.95. Other consoles also outstanding values at \$39.95.

MEET THE DEMAND

Crosley presents smart developments of built-in aerials — television outlets — simplified push button tuning — features that the public is promised this season!

OFFER MORE INNOVATIONS

with exclusive Crosley Curveflector Tone Diffuser in consoles . . . advanced Crosley automatic switch from batteries to AC-DC current in portable radio . . . Capehart record changer in combination 639M.



COMBINATION PHONOGRAPH AND RADIO 639M
Latest type crystal pick-up, heavy motor, efficient radio and fine electro dynamic speaker create quality instrument, high fidelity assured. Capehart record changer, new Curveflector tone diffuser. **MODEL SHOWN 5114.** Other combinations at \$69.95 and \$49.95.

GIVE MOST FOR THE MONEY

Every practical radio improvement plus many clever Crosley developments—some solely Crosley—some great advancements on existing features—all backed by 18 years of radio experience and discovery. This is pioneer radio—still out in front with all the advantages that accrue to those who MAKE history.



Prices slightly higher in South and West.

YOU'RE THERE WITH A

CROSLLEY

THE CROSLLEY CORPORATION

POWEL CROSLLEY, Jr., President Home of "The Nation's Station"—WLW—70 on your dial

CINCINNATI



CONSOLE 819M
Massive cabinet, 8 tubes, heavy duty speaker assembled on NEW tone diffusion baffle—the exclusive Crosley CURVE-FLECTOR. Far and away the biggest radio package on the market at the price. Biggest selling single radio item in Crosley's 18 years. \$89.95.

RCA VICTOR SALES are WAY AHEAD IN 1939!



56.2% Increase in Distributors' Sales to
Dealers for First 8 Months

93.3% Increase in Distributors' Sales to
Dealers in First Two Weeks Sept.

STRONG PROOF OF

1. The High Standards of Quality of RCA Victor Products
2. Tremendous Consumer Acceptance and Demand
3. Strong Dealer Cooperation
4. The Success of RCA Victor's New Merchandising Policy

IT PAYS TO GO

"RCA ALL THE WAY"



RCA Victor

RCA MANUFACTURING CO.,
INC., CAMDEN, N. J.
A SERVICE OF THE RADIO
CORPORATION OF AMERICA

FOR FINER RADIO PERFORMANCE — RCA VICTOR RADIO TUBES!...

You Need PROFIT DEPENDABILITY

You get it with Sylvania Radio Tubes because Sylvania prices assure you maximum profit on every sale. Check around the trade. See for yourself how profit-minded retailers have stepped up their businesses by featuring these world-famous tubes.



Plus Product Dependability

A complete staff of Sylvania engineers keep Sylvania Tubes at the top of the list—in quality, in proved up-to-the-minute developments, in styling, in dependability! And Sylvania backs you up by guaranteeing every tube you sell—in writing!



Plus Company Dependability

Sylvania's 37 years' experience, its modern plants capable of producing 120,000 tubes a day and its sales in 124 countries of the world prove Sylvania's dependability. (Pictured is the Sylvania radio tube plant at Salem, Mass. Other plants are at Emporium and St. Marys, Pa.)



Thousands of successful dealers all over the country are featuring Sylvania because the Hygrade Sylvania Corporation gives

them "all three"—company dependability, product dependability, profit dependability. Sylvania's proposition is worth looking into.

Hygrade Sylvania Corp., Emporium, Pa. Also makers of Hygrade Lamp Bulbs

SELL SYLVANIA

SET-TESTED RADIO TUBES

" D E P E N D A B L E A L L W A Y S "

ARVIN Radios



MODEL 802 \$24.95
LIST

Battery-Electric Portable complete with battery, built-in loop antenna and 5 working tubes. A sturdy, dependable portable for outdoor or indoor use. Operates on self-contained batteries or 110 volt AC or DC current. One set of batteries, furnished, provides 250 to 350 operating hours. Plenty of sales appeal in this set.



MODEL 702 \$24.95
LIST

6-Tube AC-DC Superhet with push button and dial tuning. Beautiful walnut wood cabinet. Built-in loop antenna. High sensitivity and keen selectivity provide wide range performance. Permanent magnet 8-inch speaker for fine tone and voice reproduction. A radio value seldom seen at this price.

FAST MOVERS

FINE PERFORMERS

LOW PRICES

BIG VALUES



MODEL 402A \$6.95
LIST

The Little Giant of radio land, with smart new tuning and 3 tubes. Unbreakable cabinet. Choice of ivory or (walnut model 402). 20-foot antenna attached. Small enough to tuck away in luggage, powerful enough to do an almost unenviable job. A rapid fire seller.



MODEL 602A \$18.95
LIST

Six-Tube AC-DC Portable Superhet with built-in loop antenna and convenient carrying handle. Plastic cabinet in ivory or (walnut model 602 at \$16.95). Variable tone control. A powerful, fine performing set.



MODEL 502 \$9.95
LIST

5-Tube AC-DC Superhet. Extremely sensitive and selective. Electro-dynamic speaker. Beautiful illuminated airplane dial. Choice of ivory or walnut finish. Unbreakable cabinet. 30-foot antenna attached. Small but mighty. Out-performs many radios that sell at twice its price.

NEW 1940 MODELS—DEPENDABLE, BIG-VALUE SETS—FROM A REPUTABLE MAKER

New Arvin Car Radios for 1940 meet every prospect. Two 5 tube single unit sets, after easy under-instrument panel installation—with direct control dial tuning, or remote 4 push button automatic tuning. These powerful sets have almost unbelievable sensitivity and selectivity. All at the amazingly low prices. All Arvin Car Radios have the famous Phantom Filter which boosts signal strength and clears reception.

MODEL 510 with direct controls, disc-type tuning and 5 tubes. A start-up value at this price.

\$14.95
LIST



MODEL 610

Two other 1940 Arvin Car Radios give you the added sales appeal of matching panel controls and push button remote control tuning. Model 710, 5-tube chassis and 8" speaker with universal remote control, \$24.95... with matching panel control, \$28.80. Model 810, deluxe with universal remote control, \$46.10... with matching panel control, \$49.95.

NOBLITT-SPARKS INDUSTRIES, Columbus, Indiana

MODEL 610 with push button and disc-type dial tuning and 5 tubes. A single unit "double-value" radio.

\$17.95
LIST

THE *NEW* WILCOX-GAY RECORDIO... SENSATIONAL LEADER OF A GREAT RADIO LINE FOR 1940



"BEST LINE THIS YEAR!"

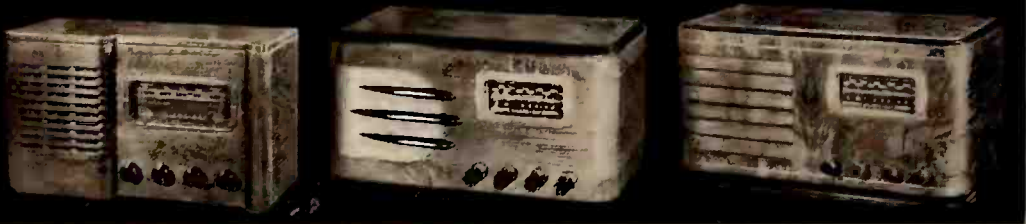
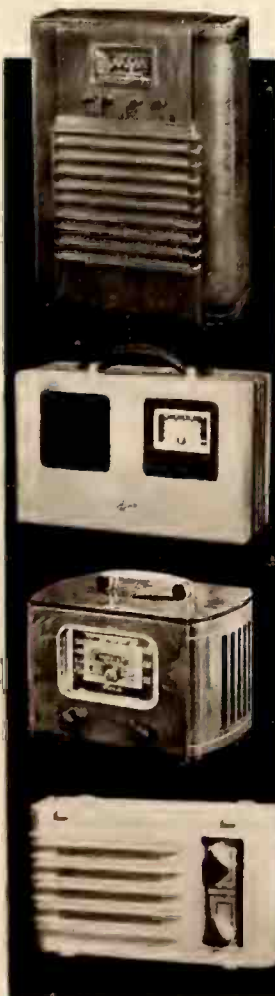
...with the RECORDIO that---

- Has everything in radio and phonograph plus automatic recording.
- Gives breath-taking demonstrations — makes buyers out of lookers.
- Makes prospects out of every home regardless of their present radio.
- Creates interest in your store—advertises itself and brings in customers.
- Raises unit sale price and makes steady repeat business in records.

*Recordio sales create demand for the other 20
Wilcox-Gay models*



WILCOX - GAY CORPORATION
CHARLOTTE MICHIGAN
EXPORT DEPT., 100 VARICK STREET, NEW YORK CITY, U. S. A



OCT 21 1939

RADIO *and Television* TODAY

Busy Days Are Here Again!

From all across the country come reports of radio sales curves, already pointing upward, reaching for still higher levels.

Console sales are better.

Combination sales are rising.

Compact sales are growing.

And the average unit sale is increasing, too.

And what are the factors responsible for this broad advance, which RADIO TODAY predicted many months ago?

1. The war, and the way radio measured up to new opportunities for rendering a public service has again captured the public's interest, and fancy.
2. Better business has brought a new found enthusiasm to dealers, and that is being conveyed to more prospects, creating a stronger urge to buy.
3. Television has come, been seen, and not bought, and this has released a long pent up buying desire on the part of thousands of listeners who were "waiting for television."
4. The 1940 radios have by far greater dollar value, stronger buying appeal, than radio has ever presented before.

5. The built-in antenna, makes it easy to demonstrate in the home, that these 1940 sets are far and away, better than the ones prospects are now listening to.

Conditions radio men have long hoped for are here.

Dealers who are enthusiastically telling more prospects about the new sets—and the new programs—and asking them to buy more often—are getting the biggest sales gains.

People aren't rushing to stores to take sets away from you—but they can be sold.

Sales gains aren't just happening—but they are being made by consistent effort.

Manufacturers have done their part.

Broadcasters are doing theirs.

Dealers who are selling—enthusiastically and consistently—are reaping their harvest.

The opportunity for new found sales and profit levels is with us—but it must be recognized—and welcomed.

Busy days are here again.

War Stimulates Short-wave Interest

Hearing London, Paris, Berlin, Moscow direct, again intrigues American listener

With European war news being so frequently interjected into our regular broadcasts, a new interest in the source of the news has grown in many peoples' minds.

Short-wave reception, which had lost much of its fascination after the first flush of its novelty thrill wore off, has now taken a new lease on life.

With American news analysts or commentators ordered to keep drama out of their broadcasts, more and more people are turning to short-wave sets to get their news and propaganda direct from the belligerent capitals.

This means business for the radio trade. New short-wave receiver sales are boosting sales figures. And tuning up the short-wave bands on the old consoles is keeping the serviceman stepping too.

Short wave reception has again come forward as a real selling tool—and may this time do a job that will be long remembered.

Records of European Broadcasts

Our front-cover shows three outstanding broadcasts by European leaders, as recorded on the Esterline curve-drawing meters in the main NBC studios in Radio City, New York.

All programs going out over the NBC Red and Blue networks are con-

tinuously recorded day and night on these instruments in order to afford testimony that the telephone company's volume-level restrictions have not been exceeded at any time. The charts shown are made from photographs of these volume-level records, and reveal the difference in pace, phrasing and emphasis of the three European leaders.

Tube Situation Clearing. New List Prices and Discounts

At last it seems that the receiving-tube situation is clearing up. Manufacturers have announced reductions in list prices—meanwhile increasing prices to the jobbers in some cases, but with weighted average costs remaining about the same.

The new price changes will greatly reduce the margins that the jobber, dealer, and serviceman now get. This means that servicemen will have to charge more for their labor, instead of obtaining wide margins from tube sales. Standard discount will be about 50 per cent, instead of the previous 60 per cent to 80 per cent.

Naturally these prices will prevent large dealers from offering 40 per cent discount to the public, which has been so troublesome to small dealers and servicemen.

The new list prices (weighted) average about 95 cents—in contrast



David Sarnoff, president of RCA, who contributes a foreword to the new book on television which L. R. Lohr, NBC's president has just written.

with the previous average which was over \$1.25.

Result of the new schedules will give consumers a break. "It will no longer cost as much for five tubes as to buy a new set!" commented one tube man.

Here are some of the new prices, which are typical of the changes:

Type	New list	Old list	New dealer net cost
24A	\$.80	\$1.25	\$.40
8060	.80	.30
6K7G80	1.25	.40

From the dealer's angle, the new schedule should facilitate selling complete sets of tubes for the older sets. No longer will eight tubes cost \$10 list, but approximately \$6.50.

Teeth in Fair Trade Laws

That the Fair Trade laws do have teeth, and can be made effective when there is the desire and the will to do so, is the opinion of the San Francisco Superior Court.

Judge F. H. Griffin decreed, in a sweeping judgment, that the resale prices of Zenith radio must be maintained, and thus brought to a conclusion more than 5 months of court proceedings, instituted by the H. R. Basford Company, San Francisco, northern California Zenith distributors.

Thus in the opinion of students of trade legislation, the failure of the fair trade laws to provide relief to the dealers from predatory price cutting was more the result of lack of dealer, distributor, manufacturer will to maintain price, than any debilitating weakness in the laws themselves.



Major Armstrong explains frequency modulation to Editor and Mrs. Caldwell of Radio Today, while in the foreground Dr. W. R. G. Baker, big boss of GE radio, demonstrates a new GE FM set to Prof. Doolittle of WDRC, Hartford, which is putting in a FM transmitter. Photo snapped during FM showing at Lederer's, Bridgeport, Conn.

"MAGIC WAVES"

New Things in Radio. Present and Future Uses of Radio Tubes.

Weekly Broadcasts by
Dr. O. H. Caldwell
Editor of *Radio Today*

NBC Red Network, Friday Evenings
7:45 p.m. E.S.T. 6:45 p.m. C.S.T.

"The mysterious origin and fascinating behavior of electrons, those infinitesimal particles which make radio and television possible, will be discussed and dramatized in an exciting new series entitled *Magic Waves* to be presented weekly over the *NBC-Red* Network Friday evenings at 7:45 p.m., EST," announces the National Broadcasting Company.

"Orestes H. Caldwell, editor of *RADIO TODAY*, will cooperate with Gerald Holland, new and talented member of the NBC writing staff, and with the technicians of the NBC family, in making these programs an authentic adventure for lay listeners who want to know more about the magic of radio and of modern communication.

"In each broadcast the editor, who is well known as an interpreter of scientific wonders for the lay mind, will take up some fascinating phenomenon of radio, using the term in its widest sense. His comments will be illustrated and amplified by a dramatic scene written by Holland," concludes the NBC official communiqué.



Philco Day at the N. Y. World's Fair brought 7,500 employees and execs to celebrate. Officials shown at the Ford Exposition building include, l. to r.: James T. Buckley, John Ballantyne, Nelson Miller (Ford), Harold Butler, E. S. Peyton and Geo. E. Deming.

Dozen Broadcasters to Have Frequency Modulation

By the first of the year it is expected that a dozen broadcasting stations in the East and Middle West will be transmitting frequency-modulated programs, using the Armstrong method. Schenectady, Boston, Hartford, Alpine, N. J., WQXR (New York City), Pittsburgh, Milwaukee, Duluth, are among the cities which will have FM.

Official approval by the Federal Communications Commission has given Station WOR a full go-ahead in its plans to construct a new frequency-modulated broadcasting station to service the metropolitan area, according to an announcement made September 29 by J. R. Poppele, chief engineer of WOR.

The new station will operate with a power of 1,000 watts on an ultra-high frequency channel of 43.3 megacycles under the call letters W2XW1.

Employing the Armstrong system of frequency modulation the new station's site is to be selected by WOR engineers within the next few weeks at the conclusion of extensive field tests.

STROMBERG TOO

Also interested in frequency modulation is Stromberg-Carlson Co., and plans are under way for construction of a transmitting station according to E. A. Hanover, v.p. A license has been granted by the FCC to operate experimentally on 1 kw. of power. Upon completion, programs originating from the Stromberg-Carlson owned station, WHAM, will be broadcast on the frequency modulation band.

IRE Rochester Fall Meeting

The Rochester Fall Meeting of the Institute of Radio Engineers and the RMA Engineering department, will be held November 13, 14 and 15 at the Sagamore Hotel, Rochester, N. Y. The fall meeting is the annual convention for receiver and tube design engineers. Technical sessions will include papers on television, frequency modulation, new circuit developments and other subjects of importance to the radio engineer.



Kendall Clough, chief engineer and president of Clough-Brengle Co. now assumes personal direction of C-B. instrument sales.



Powell Crosley, Jr., who suffered three broken vertebrae in fall from his horse, during the same week his Cincinnati Reds won the National League Pennant, and he was subject of feature article in *Satevepost*.



"A radio for every room" is the slogan to move small sets without hurting console sales. United Artist film "Intermezzo" shows this little girl entertained by her own radio.

Dealers Plan

To increase their sales in radio's best selling season. Here are their methods—

1. Start a direct mail campaign giving special reasons for buying a new model.
2. Advertise in newspapers with series of characteristic ads.
3. Distribute circulars showing variety of suggestions.
4. Telephone all last year's customers; their need service now.
5. Send personal Christmas greeting cards to customers—without advertising.
6. Put the spirit of Christmas into your window display; offer gift suggestions from children's albums—to the automatic combination.

Sell 'em, Service 'em,



More new features this year. Convenience of built-in antennas, as in the new Philco above, is a big talking point for the "better-half."



Whose sets are out of date? Does John Customer need service on that set he bought seven months ago? Keep a record, then call 'em up regularly.

Christmas Promotion

Radio Today questioned hundreds of dealers to find what is actually being done.



Neat, colorful displays in the window and in the store, will do much to scatter Christmas spirit. Tags reading "To Dad," "To Sister," etc., will personalize the appeal.

7. Colorful, neat, gift-suggesting floor displays.
8. Talk good service, trade-ins, new features of 1940 models.
9. Sell up to the larger units of sale.
10. Push short-wave in new sets to capitalize on war-news interest.
1. Tie in records with combinations. Suggest a "package" selection of records tagged "To the jitterbug," "For the music lover," etc.
2. Sell sound for church gatherings, store sales promotions, etc.
3. Arrange stock to give traffic space.
4. Show a complete line of wanted merchandise.

Satisfy 'em, Sell 'em again!



Combinations and records help each other. The Crane Twins of Hellzapoppin—a good pair too—are quite happy over their Emerson radio-phonograph.



It's a grand chance to leave literature and talk about your new consoles when returning the serviced set—which can be used for an extra radio.

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Advertising- "Tell 'em To Sell 'em"

If you don't advertise the merchandise you sell,
be prepared to advertise your business for sale.

No business which is going anywhere, except out, can afford *not* to advertise.

Just what is this thing that is so vital to business, that we cover so lightly by the word "advertising"?

Advertising is telling your customers, and those you wish to be customers, that you have what they need, and want, when they want it, at the price they can afford to pay, sold in the way they like to be served, and asking them to "come and get it."

There are many media of advertising any one, or all, of which will carry your message to a certain number of people.

WHAT ADVERTISING MUST DO

All advertising must do at least two of the following three things, and preferably all three.

1. Bring customers *in* to your store.
2. Move merchandise *out* of your store.
3. Increase your good will.

Do not expect any single advertising effort to produce an avalanche of business; it doesn't work that way, unless you are selling something at a ridiculous price.

Repetition still builds reputation. And so, too—consistent, continuous, honest, advertising builds good will and sales *month by month* and *year by year*—slowly, yet surely.

When general business is bad, *advertise* to make yours *better*. And when business is good, *advertise* to make yours *best*. Continuity of effort is *very* important in telling your prospective customers about your store, your merchandise, and your

friendly service. It's the long haul that *really* counts.

No business is *too small* to advertise, and none so large that it can stop advertising, *profitably*.

Advertising should be planned, its message sound and consistent, and aimed directly at the people you want to serve. It's confusing to emphasize "high quality" and "fine service" one day, and feature "lowest prices"

Humor brings returns in direct mail. National Union provides these for servicemen.



the next. High quality and low prices are like oil and water, they just don't mix.

WHAT ADVERTISING COSTS

A radio dealer should spend 5 to 7 per cent of his sales' dollar for advertising; less will not provide advertising in keeping with his business, more will not produce results commensurate with the expenditure.

In *starting* a long-time advertising campaign, you may find it desirable to spend 20 per cent the first *six months*—15 per cent the first year—10 per cent the second year—and then as sales increase, settle down to 5 per cent a year, so that over a period of 5 years the total will be around 7 per cent. It may be a little *faster* that way—but a straight 5-to-7 per cent budget is *safer*.

Newspaper space in very small towns, where rates are low, and direct mail for suburban and neighborhood dealers has been found to be the most effective and economical advertising media for radio dealers.

A tie-in with mfr's billboards builds prestige, makes dealer known. Jobbers will help with these.

Six Ways to Advertise

1. DIRECT MAIL—

Letters — post-cards — circulars
— folders — leaflets — house
organs.

2. NEWSPAPERS—

Display — institutional — classi-
fied.

3. RADIO—

Local stations — transcriptions
— spot announcements.

4. OUTDOOR—

Billboards — store signs — truck
signs — bus cards.

5. PROGRAMS—

Church — club — musicales —
amateur drama — etc.

6. STORE FRONT—

Window displays — interior dis-
play.


PERSONALIZE YOUR ADVERTISING

Since both frequency and continu-
ity are important, over any extended
period of time a daily, or semi-weekly
small ad will produce better results
than the same amount of space used
in half page or page units.

It is desirable to establish some
characteristic border, layout, or typo-
graphy which will quickly identify
your ad, and keep your copy alive,
informative, interesting.

The ad below appeals to pride of owner-
ship checks results and plugs radio
sales—without mentioning price

CUSTOM-MADE



A new kind of phonograph and
radio. Plays complete symphonies
and other recordings automatically
— beautiful tone. Mahogany or
walnut with tooled leather top.

Catalogue on Request

LIBERTY MUSIC SHOPS
450 Madison Avenue at 50th Street
793 Madison Avenue at 67th Street
8 East 59th Street — Savoy Plaza
254 Worth Avenue, Palm Beach Fla.

ROBERT'S RADIO STORE

PROFITOWN, ILL.
October 10, 1939

Mr. John Prospect
100 Sales Avenue
Profitown, Ill.

Dear Mr. Prospect:

Think of it! — \$30,000,000.00 worth of radio
talent will be offered in the "Theatre of the
Air" within the next few months. The best avail-
able in drama, song, concerts, symphonies, dance
orchestras, fights, foot-ball, politics — —
everything for your enjoyment.

Are you going to have a choice seat or one away
up in the balcony? — — your radio is the only
answer and remember, today's broadcasting cannot
be received on sets of limited capacity.

Our new trade-in plan guarantees you a front seat —
for we will buy your present set and apply the pro-
ceeds toward a new 1940 model. Drop in any day
from 9 to 9 or send us a note asking for informa-
tion.

Cordially,
Wm Robert
Manager - Radio Dept.
ROBERT'S RADIO STORE

ACT:W

People buy radios to hear entertain-
ment — r e m i n d
them that new sets
get it best.

The reverse of the card below is a radio
log. Keep your name near the radio.

<p style="text-align: center;">RADIO REPAIRS!</p> <p>Call us for expert, guaranteed, service on any radio—any make, any model, any year! Latest test- ing equipment, rapid service and reasonable rates. We are members of Radio Manufacturers Service!</p>	<p style="text-align: center;">NEWtown 9-6050</p> <p style="text-align: center;">LONG ISLAND RADIO SHOPS</p> <p style="text-align: center;">RADIO •••• SERVICE PUBLIC ADDRESS SYSTEMS RENTED</p> <p style="text-align: center; font-size: small;">108-01 37th Avenue Corona, Long Island OVER</p>
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In general, these simple rules are
fine guides.

1. Take only *one* big idea for each
ad.
2. Use only *one* thought in each
sentence.
3. Never use a *large* word when a
small word will do.
4. Say *what* you mean—and *mean*
what you say.
5. Be brief—logical—enthusiastic—
sincere.
6. Avoid superlatives—they lead to
exaggeration.
7. Use pictures and illustrations
freely.
8. Support your advertising 100 per
cent.
9. Make every ad sell your store, or
sell your merchandise.
10. Be yourself.

The same principles apply of course
to direct mail. In addition, in direct
mail you must also select the specific
people who are to receive your adver-
tising. Your mailing list is a vital
factor in the effectiveness of direct
mail advertising.

It is not hard to build a good mail-
ing list, though it is a work which
is never done. New names are con-

stantly added, addresses are changed,
those who move to other cities, or die,
are removed.

To build a mailing list, the finest
starting point is a list of your own
customers.

To this you can add the names of
telephone subscribers, automobile reg-
istrations, voters, tax payers, lodge
members, industrial employees, public
utility customers, names from the city
directory, names appearing in the
newspapers, engagements, weddings,
births, contest entrants, etc.

All new names must be carefully
checked to avoid duplication, initials
must be correct, the prefix Miss, Mr.,
Mrs., Dr., etc., indicated, and the ad-
dress kept accurate.

ADVERTISING IDEAS

Ideas for your advertising copy can
be found by studying the ads of na-
tional advertisers in magazines, on
billboards, in your papers, as well as
the great mail order catalogs, though
you should never *copy* another. Re-
member that *your* ads are *your* am-
bassador, and must represent *you*.

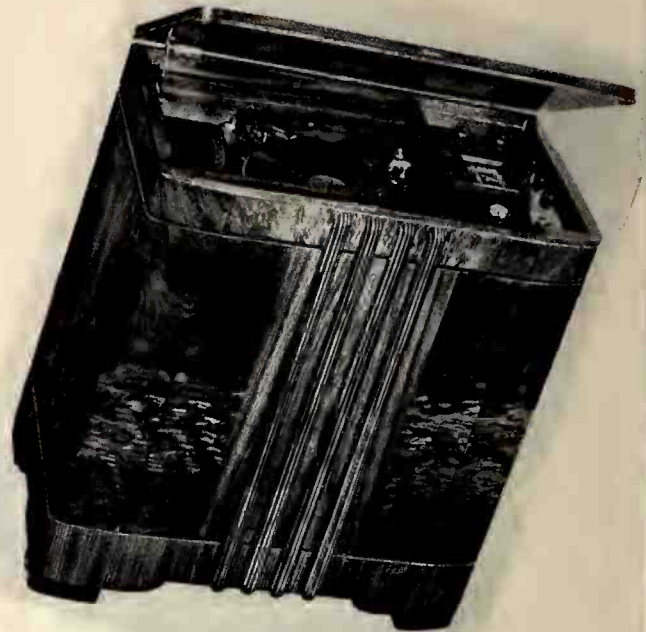
(Continued on page 33)

Combinations-

Ideal gift-items, they boost record sales too



No television bugaboo this Christmas, so sell up with models such as this Continental with automatic record changer. Contact Father to sell these.



Dealers report increasing sales in \$100 class. Stress pride of ownership and more features for little extra money. Console combination is Emerson's \$99.95 model.



Record deals start customers on way to music libraries; make profit in two lines. Here's RCA table Victrola — list includes \$2.25 worth of records.



There's one eye-filling combination in every 1940 line. Better pick-ups and larger speakers are featured. Westinghouse model has 2 wave bands.



Displayed in same section radio-phonos and records help each other. Keep customers coming to YOUR store by good stock of both. This Stewart-Warner uses built-in line antenna.

Why The Customer Walked Out!

A survey of thousands of customers discloses a cross section of our merchandising faults. Common sense, honesty, courtesy, cost little, mean much.

As insurance against decay, every business needs new customers, but the "old customers" are a mighty important factor in business success, too.

Keeping old customers has an important bearing on retail profits.

First, because it costs much less to sell an old customer than it does to locate a new one, and take the new one away from her habitual retailer.

Second, because the old customer who is satisfied, will give you word-of-mouth recommendation which would be hard for you to duplicate at any price, and—

Third, because old customers are your friends, are glad to do business with you, and overlook many of those errors which can be guarded against but never entirely eliminated.

STUDY THE FIGURES

To provide factual information as to why customers are lost, a survey of many thousands of consumers was

made, and the results are presented in the tabulation on this page.

Study those figures. They show a costly condition almost entirely within the control of each dealer, and remember that they represent the opinions of all classes of customers of many different kinds of retailers. Check your own policies and see how they stack up.

Note that the first 7 reasons are personal failures. Of all customers who were lost to some retailer, 63 per cent were lost because some person failed to treat the customer as they would like to be treated themselves. No magic, no special skill or experience, nothing unusual is involved. Just that age-old, ever present matter of human relations.

Common sense, honesty, and courtesy were the factors that were lacking. Things which cost nothing, yet mean so much.

The last four reasons, accounting for 37 per cent of lost customers, per-

tain directly to the store and the owner's policy.

BECAUSE OF POOR SERVICE!

Only 10 per cent of the customers were lost because prices were high, but 15 per cent were lost because service in the store and after the sale was made, was poor. Service is a matter of owner policy, but bear in mind that you are paying for the service, in dollars or in lost customers, whether you give it or not.

Only 8 per cent of customers were lost because of poor assortment of merchandise, but 11 per cent were lost by unfriendly store policies or methods, and 7 per cent because promises were broken. Such indeed are inexcusable faults which probably no store owner would condone, yet which go on right under his nose.

Unfriendly, uninterested and discourteous salespeople send 25 per cent of lost customers to a more friendly competitor, and these probably are the same salespeople who are grumbling because they do not earn more. As a matter of simple fact, such salespeople are a liability at any price, and do not belong in any selling organization.

THE HUMAN SIDE

Personnel, and human relations, play a vital factor in the life of any business, because they daily involve the good will, the greatest asset, of your business.

Too little importance is given by most dealers, as this survey shows, to the selection, and the training, of people to *please* customers.

No better guide to what *customers* expect can be found than what *you* expect from others. We all react very much alike to similar treatment, though some a little quicker, or a little more violently, than others.

But we can be sure that we buy from a person or a store we do *not* like only until we can find one we *do* like.

And therein lies the story of the quick success of one store, and the slow death of another.

It's just another example of the vital importance of *man-power* in the safe conduct of our business.

Reasons Why Customers Are Lost

1. Poor Service	- - - - -	15%
2. Unfriendly Store Policy	- - - - -	11%
3. Unreliable—Promises Broken	- - - - -	7%
4. Unfriendly Salespeople	- - - - -	6%
5. Uninterested Salespeople	- - - - -	10%
6. Ignorant or Discourteous Salespeople	- - - - -	9%
7. High Pressure Salespeople	- - - - -	5%
8. Prices Too High	- - - - -	10%
9. Poor Assortment	- - - - -	8%
10. Poor Quality of Merchandise	- - - - -	9%
11. Unpleasant Store or Methods	- - - - -	10%

**Common sense, honesty, courtesy,
cost little, mean much**

Profits in Furniture Radio!

Sell style, color, finish, and quality of radio. Price of secondary importance.

By H. L. M. Capron

Former manager of radio departments of Macy's and Bamberger's, and pioneer in the development and sale of "furniture radio" models.

Brunswick's authentic Adam design Panatrope with auto-record changer tunes three bands.



The women of our country, God bless 'em, are directly associated with nearly 90 per cent of all consumers' purchases.

The great women's magazines over a period of years, have been a tremendously important factor in moulding women's opinions, influencing their thoughts, and their buying habits. One of the direct results has been to make all of us more style conscious than ever before, more receptive to products styled in good taste.

Cabinet styling has now become at least as important a factor in influencing a radio sale as performance, and in many cases, more important.

No one will ever know how many radio console sales have been lost because console styling was not in harmony with the homemaker's desires—but tens of thousands are conservative, and millions may be much closer to the truth. The lesser conspicuousness of the compact has been responsible in no small degree for its continued preference by so many people.

Current console styling is closer to the desires of the majority of people, but still falls far short of satisfying those of discriminating taste.

SELL STYLE, LINES, COLOR, WOODS

Many manufacturers now produce radios contained in cabinets true to the style traditions which have come down through the ages, as well as cabinets which faithfully reproduce pieces of furniture, traditional and contemporary.

No line of customers will form in front of your door to take these furniture radios away from you, but they can be sold, and at a nice profit, too.



Sets in furniture style like the Farnsworth Adam Panamuse are period fitting in design, ultra modern in radio features. Most carry "equipped for television" tags.

The technique of selling furniture radios must naturally be somewhat different than selling conventional radio consoles. The methods, however, are simple, the results ample.

First, everyone selling furniture radios must be thoroughly informed on style, line, wood; color and construction of their furniture models, and on the characteristics of the traditional "periods" as well. Must be at least as well informed as their customers and preferably much better informed. It is the furniture you sell, and it must be in harmony with the room in which it is to be used, as to style, color, and finish.

Care must be used that you do not try to sell a maple hutch to be used in an 18th century mahogany living room, or a mahogany Hepplewhite piece to go in an Early American walnut or maple room.

PROMOTION SHOULD REACH WOMEN

An important factor in formulating the women's decision to buy is the fact that though the radio is listened to only some four hours a day, the cabinet is looked at for 16 hours.

The furniture-radio must rather precisely "fit" the customer's decorative scheme, and when it does, price becomes entirely secondary in importance to "pride of ownership."

Because this is so, you cannot successfully sell furniture-radios if your assortment consists of only one or two styles. You must have large pieces and small, in maple, mahogany and walnut, Colonial, Federal, 18th Century, English and French, and modern.

Furniture stores can perhaps best display furniture radios in appropriate "rooms." But an equally effective display is to arrange furniture-radios to alternate with conventional consoles, with chairs, and tables of the same period, and with appropriate accessories, such as pictures, wallpaper background, vases, lamps, etc.

In this manner all customers must see the furniture-radio, and they should always be demonstrated too.

CONTINUED ADVERTISING BRINGS RESULTS

Furniture-radio requires sales promotion. Window displays, direct mail, newspapers, and model homes, are the mediums for consistent promotions. Tie in such consistent publicity with the interior decorating articles of the women's magazines, even to reproducing their illustrations in your direct mail, windows and newspapers. Thus you can reflect the authority and long-time prestige of such publications as *McCall's*, *Red Book*, *House and Garden*, *House Beautiful*, *Good Housekeeping*, *Ladies Home Journal*, and *Women's Home Companion*, to your store, your merchandise, and your sales promotion. Copies of these magazines, too, can well be used in your window, as back-ground blow-ups, or accessories, and should certainly be on tables in your store for customer reference and direct-selling tools.

(Continued on page 24)



NO. 420-L \$75⁰⁰*



NO. 430-M \$99⁹⁵*



NO. 420-PL \$139⁵⁰*

Values Like These

MAKE POSSIBLE A RECORD LIKE THIS

Already Stromberg-Carlson boasts half again as many more dealers as last year! When a line attracts the trade to that extent, you can be sure it offers sensational profit possibilities. The answer is *values!* Values that create volume sales—in big units—at a real profit!

Just look at three of them: The full-featured No. 430-M Labyrinth radio with the patented Carpinchoe Leather Speaker for only \$99.95*! The gorgeous Stromberg-Carlson No. 420-PL automatic radio-phonograph for only \$139.50*! The big No. 420-L console with a chassis that's tops in performance for only \$75.00*—the lowest priced console ever to bear the Stromberg-Carlson name! If you haven't already switched to radio's hottest line, send for full information today!

**All prices f.o.b. Rochester, N. Y. Subject to change without notice.*

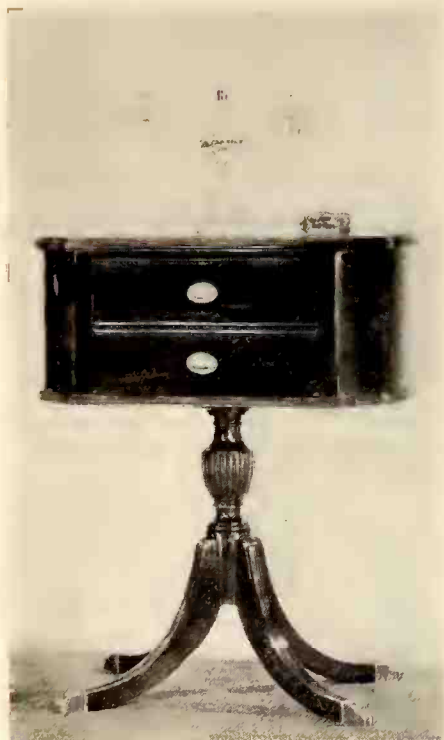
Stromberg-Carlson Telephone Mfg. Co.
250 Carlson Road, Rochester, N. Y.

49%
More Dealers
ARE NOW SELLING
STROMBERG-CARLSON
-are you one of them?

There is nothing finer than a

Stromberg-Carlson

Furniture radios appeal to the woman's pride of ownership. Note how the little lady flaunts her Zenith radio and record player tables



Stromberg-Carlson's Model 410-T is a reproduction of an original Duncan Phyfe sewing table. Cabinet is maghogany.

No one ad, or direct-mail piece, can be expected to produce an immediate avalanche of business, but consistently carried out, supported by attractive windows, the effects are cumulative, and soon reach mighty gratifying proportions.

OBSCOLESCENCE AND CUT-PRICE MINIMIZED

Competition is far less keen in this type of merchandise, and in the long run profits are much better than with conventional cabinetry. Obsolescence is a much less important factor, with furniture-radios, because styles which have been good enough to come down through the ages cannot pass out of popular approval by the calendar.

All of which means that your consistent sales promotional efforts and expense is amply justified by the profits, that the business you build on this basis will not flit away to some price-thirsty competitor, and that your investment in stock is much safer from the ravages of obsolescence.

Reputation, too, thrives with such merchandise as is not hawked by every store in town, and this, too, pays dividends.

Almost every furniture radio you sell becomes the vehicle for moving others, and your whole radio operation takes on a dignity, a reputation, far more in keeping with the great business it should be, than the racket so many try to make it.



While not period in style, RCA's Little Nipper bookcase is indicative of the trend of buying for rad'io plus usefulness.

The Magnavox Belvedere sports two 12 inch double cone speakers; comes in mahogany or American walnut.



Record Buyers . . .

Record Dealers

HAIL COLUMBIA!

**Tremendous response
to New QUALITY
Popular Record at 50¢**



Day after day, the praise pours in! Day after day, dealers report ever-increasing demands! Because Columbia's new Popular Records fill a long-felt need—a quality record at a popular price.

Instant Success with Customers!

People tried these records eagerly—bought them enthusiastically—and spread the good news around. For here was the latest music—played by their favorite artists—recorded smoothly, delightfully, realistically—at a price they were more than willing to pay! And when people find that these recordings

stay clear and true through countless playings, they order again and again!

Dealers' Profits Soar!

As sales volume piles up, profits pile up, too. And dealers everywhere announce that sales volumes are even exceeding expectations. It's natural! People are quick to recognize such amazing value, and satisfied customers make for faster and greater turnover. Shrewd, progressive dealers are stocking more and more Columbia Popular Records. Join them—push these records—cash in with Columbia!

Acclaim from lovers of the finest in music!

The new COLUMBIA BLUE LABEL RECORDS, heartily endorsed by master musicians, are winning swift and wide recognition by the most critical music lovers. World renowned artists, plus the most modern recording methods, bring ever-increasing pleasure to buyers—and ever-mounting sales to dealers!

COLUMBIA RECORDING CORPORATION
Manufacturers of Columbia, Brunswick and Vocalion Records
Bridgeport, Connecticut—Hollywood, California



KAY KYSER
Columbia Popular



BENNY GOODMAN
Columbia Popular



EDDY DUCHIN
Columbia Popular



HORACE HEIDT
Columbia Popular



RAY NOBLE
Columbia Popular



MATTY MALNECK
Columbia Popular



DUKE ELLINGTON
Columbia Popular



GENE KRUPA
Columbia Popular



JACK TEAGARDEN
Columbia Popular



HARRY JAMES
Columbia Popular



RAYMOND SCOTT
Columbia Popular



TEDDY WILSON
Columbia Popular



MARTHA RAYE
Columbia Popular



ELLA LOGAN
Columbia Popular

COLUMBIA RECORDS

THE LATEST . . . AT ITS BEST THROUGH COUNTLESS PLAYINGS

Starting Right in Records

Model stocks and fixtures necessary for the radio dealer to start or expand his record department.

As the popular demand for records continues to grow, more and more radio dealers are giving serious thought to "taking on records."

The model stocks and fixtures here presented, are a sound, practical starting point for any dealer going into the business, and offers too, the means of natural expansion at a minimum of expense.

Since expansion is much easier than contraction, and safer, it is suggested that dealers start with plan No. 1 or No. 2, and expand as business indicates.

MASTER ENVELOPES AID STOCK CONTROL

To control stock and assortment the following simple plan has been found to work excellently:

1. Stock records in stock bins in numerical order.
2. Use a master index envelope in which to put the last record of that number, and to serve as the filing guide in the stock fixture.
3. When the record comes into stock, record the date—and the quantity received on these master envelopes.
4. When the last record has been sold—enter the date on the envelope, place it in the "to order" bin—and order from your distributor.

Soon the information on each envelope will tell you how many of this record you sell each week, and how long you are out of stock. From this information you will know how many to order, how many to hold in reserve so your re-order will be in stock before your last one is sold, if it is moving fast.

5. Take an order for any record you do not have in stock, and make out an envelope. Enter the special order date on it, and place it in your stock bin, empty. If you get another order for this record in less than 2 months, order 2—one for the customer, one for stock.

6. As you go over your stock envelopes in the "to order" bin, look at the record of sales shown thereon. Try to keep about 2 weeks' stock on hand.

STOCK ONLY FAST MOVERS

Order every week. On fast moving popular records you may have to fill in during the week. That's fine. When a master envelope comes up for order and shows sales of less than 1 in 2



H. C. Block, Indianapolis, put his favorite hobby to work, in devising this display of Victor Records. Autographed platters of band leaders and vocalists tie-in with their pictures and new releases.

months, don't order, place it on the "special order" basis, and then go ahead as stated in No. 5.

In this way you will keep stock well balanced, turnover under control, and will have a minimum of slow moving records.

This, or a similar method is necessary to reach the profit, turnover, and annual sales figures above, and your worthwhile profits lie in the high return on your invested capital which you can obtain, if you do follow such a method.

The equipment illustrated on these pages is planned, as are the suggested record stocks, for a minimum expenditure with which to start or grow as the business increases. Many radio men will find themselves able to invest a great deal more money in record equipment than is here suggested. The general ideas remain the same, however, and it may be readily seen that more racks, more counters and chairs, and extra listening booths are easily fitted in when space and money are available.

Average Cost and Profit for Model Stocks

Sales, Cost, Turns, Profit	Plan 1	Plan 2	Plan 3	Plan 4
Possible Annual Sales.....	\$5000	\$11,000	\$17,000	\$25,000
Stock Cost (approximate).....	\$261	\$517	\$775	\$1025
Retail Price.....	\$390	\$750	\$1080	\$1425
Gross Profit per turn.....	\$129	\$233	\$305	\$400
Annual Stock turns.....	13	15	16	17
Annual Gross Profit.....	\$1677	\$3495	\$4880	\$6800
Stock Assortment				
10" 35c Popular.....	100	150	200	300
10" 50c Popular.....	30	45	60	75
10" 75c Popular.....	30	45	60	75
10" 75c Standard.....	30	45	60	90
10" \$1.00 Classical.....	10	20	30	30
12" 1.25 Standard.....	5	15	25	25
10" 1.50 Classical.....	10	20	45	45
12" 1.50 Classical.....	5	10	25	25
12" 2.00 Classical.....	15	40	75	75
10" Album sets.....	0	2	4	5
12" Album sets.....	30	60	75	75
10" Children's sets.....	2	5	10	15

The three basic units for building a record department; a record-rack, counter and a listening booth. Each fixture measures six feet long so they are easily rearranged as department grows or if store is remodeled. Equipment here is made by A. Bitter Equipment Construction Co.

Multi Record-Sellers

To offer the newcomer in records every possible facility for selling, a solution to the listening-booth problem has been worked out by RADIO TODAY.

In the adjacent drawing, the rear elevation view of a typical counter is shown fitted with four phonograph turntables, individual amplifiers, and a common power supply. The amplified recording is reproduced in a high quality crystal headphone, thus permitting four people at one time to listen to their favorite records.

STANDARD EQUIPMENT USED

The equipment used in the amplifiers, power supply, the turntables, and headphones are all standard. The list cost of good quality parts for 4 complete units, power supply and wiring will be approximately \$90. Since the dealers will have most of the parts on hand for the amplifiers and power supply, the cost will be a great deal less than \$90. The turntables are of good quality and run at 78 RPM only. The pickup and headphones are of the crystal type for the best quality and service. Good parts should be used throughout to give the maximum in quality and service life.

For technical details on the amplifiers and power supply, see complete description on page 60.

Inexpensive Ear-Phone Listening Stations

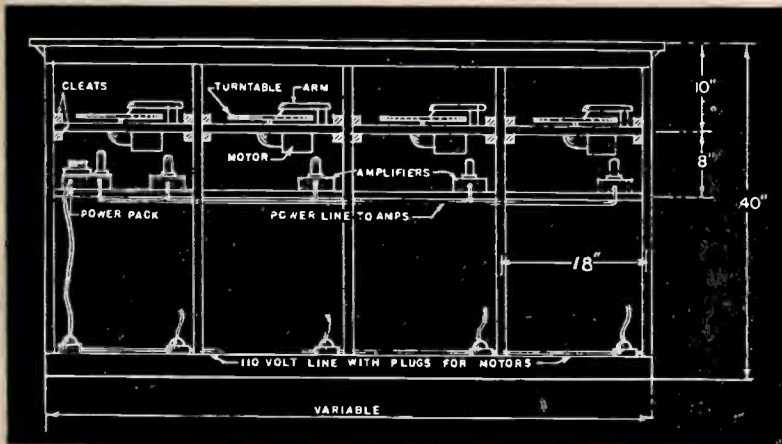


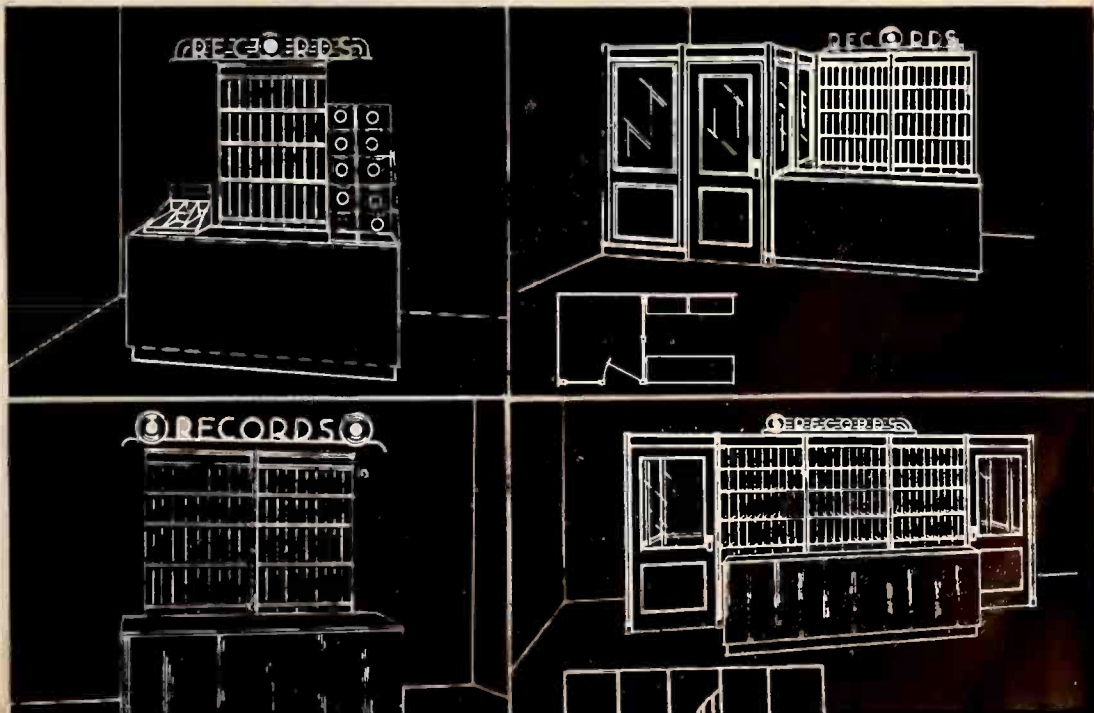
Diagram above shows rear view of counter-mounted listening stations. Use these for jitterbugs after booths are installed. Further details on page 60.

Suggested Equipment

Shown at right are fixtures for stock cost Plans: 1, at upper left; 2, lower left; 3, upper right; and 4, lower right. Each record rack costs \$44; holds 10 and 12-inch records and album sets. Display rack for new releases costs \$6.25. Needle manufacturers will supply merchandisers for needles and accessories at little or no cost. Counters run from \$58 to \$85 or your own can be used when starting.

Two ear-phone listening stations for Plan 1 will cost \$48 at most. Another pair should be added for the other plans to bring the total cost of these handy stations to under \$90. Listening booths are added as stocks and classical record sales increase. Cost of each booth is about \$200.

Equipment prices are figured on cabinet work with good wood.



More New Things

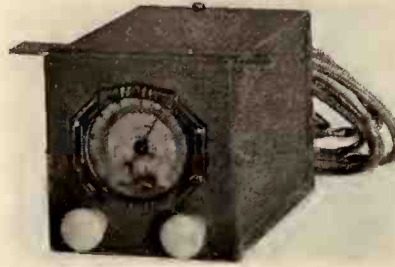


Garod phono-combination

★ Type P-43 is available in either 9 or 12-tube chassis for either AC-DC or AC operation. Available for 3-band operation, 13 to 550 meters and 4-band 13 to 2150 meters. All models equipped with built-in antenna, crystal pick-up, and 12-inch electro dynamic speaker. Automatic record changer on request. Garod Radio Corp., 115 4th Ave., New York, N. Y.—RADIO TODAY.

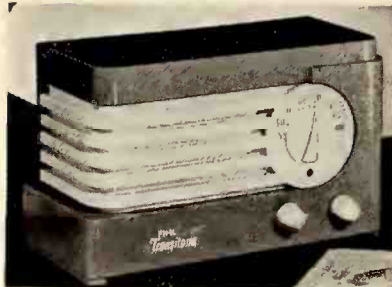
Kenyon cathode transformers

★ New line of modulation transformers for use in cathode circuit of rf stage, permit modulation of 1 kw with approximately 30 watts audio. Transformers list from \$2.40 to \$3.60 and secondary current capacity runs from 200 ma to 450 ma. Kenyon Transformer Co., Inc., 840 Barry St., New York, N. Y.—RADIO TODAY.



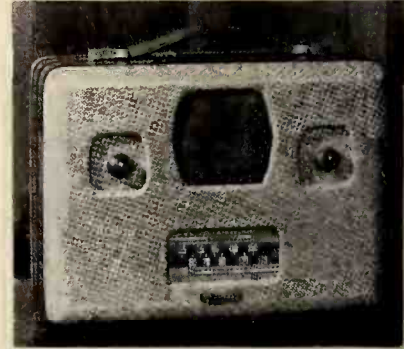
ABC auto radio converter

★ Model 510 high-frequency converter tunes 5 and 10-meter bands delivers 600 kc IF to standard auto radio. Uses 1852 first detector and 6J5 oscillator. List price \$24.98. ABC Radio Labs., 3334 N. New Jersey St., Indianapolis, Ind.—RADIO TODAY.



Philco table model

★ New Transitone model comes in 55 different color schemes for schools and colleges throughout the country. Five tube superhet features loktal tubes, AVC, and high-power speaker. List price \$14.95. Philco Radio and Television Corp., Tioga and C Sts., Philadelphia, Pa.—RADIO TODAY.

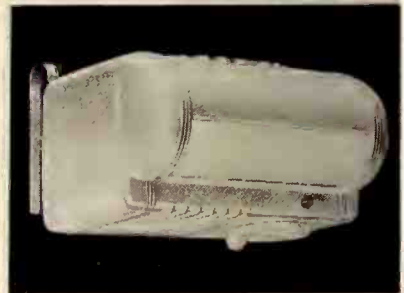


Sentinel portable

★ A new 4-tube ultra-thin portable weighs only 12¾ lbs. Tunes 540 to 1600 kc and gives 300 hours service from set of batteries. 4-inch PM speaker and loop aerial with external antenna and ground connection. Model 205-BL. Sentinel Radio Corp., Evanston, Ill.—RADIO TODAY.

Hytronic filament-tetrode

★ An instant heating beam power tetrode for use in audio amplifiers and transmitters is tagged HY69. Will deliver 7.5 watts audio with 350 plate-volts. Hytronic Labs., 76 Lafayette St., Salem, Mass.—RADIO TODAY.



Lullaby bed lamp radio

★ Five tube AC-DC superhet is combined with tubular bed lamp in new product listing at \$19.95. The radio has electro-dynamic speaker, beam-power output, and built-in antenna. The tubular lamp provides glareless light in reading plane. Lamp and radio may be operated together or separately. Ivory or walnut finish plastic. Mitchell Mfg. Co., 1550 Dayton St., Chicago.—RADIO TODAY.

RCA toy phonograph

Pictured on the left is the new unit in the RCA line of practical toys for children. Constructed of sturdy plastic, this little electrically driven phono offers instruction and entertainment through the many children's records now available. List price of the complete unit is \$4.95.

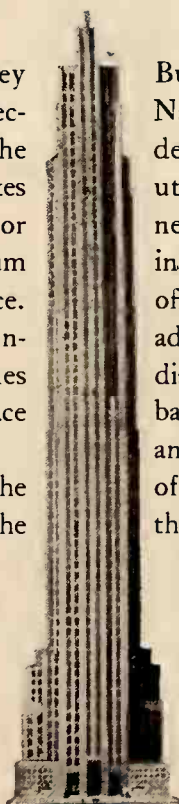


From zero to 44 million in 20 years!

in two decades research in RCA Laboratories has played a big part in making radio set ownership exceed the figures for any other electrical device

People want radio sets more than they want anything else in the line of electrical equipment. This is proved by the fact that there are in the United States more radio sets than electric irons, or toasters, or washing machines, or vacuum cleaners, or any other electrical device. Even the 44 million radios in this country are not enough. Millions of homes want *more* radios, and want to replace old models with new.

RCA takes pride in the fact that the intense public interest in radio, and the ever-growing market for radio sets, both rest in no small degree on research in RCA Laboratories. From these studies there have come many of the important advances constantly made in set design and performance.



But RCA does more. Through the National Broadcasting Company it renders a fundamental service that contributes to the life-blood of the radio business... broadcasting. For interest in buying radio sets depends on a continuous offering of good programs, and constant advance in the art of broadcasting. NBC discovered or developed many of the basic principles of radio entertainment, and is responsible for a large proportion of the advances that have been made in the technical aspects of broadcasting.

This month RCA celebrates its twentieth anniversary, confident that it has rendered in two decades a pioneering service of the utmost importance to a great American industry as well as to the American public.



RADIO CORPORATION OF AMERICA

RADIO CITY, N. Y.

RCA Manufacturing Co., Inc.
R.C.A. Communications, Inc.

RCA Laboratories
National Broadcasting Company

Radiomarine Corporation of America
RCA Institutes, Inc.

New Radio Models

Latest Additions to the 1940 Lines



Westinghouse 3-power portable

★ This 5-tube AC-DC, battery power portable has AVC, 5-inch PM speaker, and battery economizer switch. 6-to-1 ratio vernier dial. Third knob is power selector switch. Hinged door in bottom gives access to cord and aerial terminals. Model WR-676. Westinghouse Electric Supply Co., 150 Varick St., New York, N. Y.—RADIO TODAY.

Ansley period console

★ Combination 8-tube radio tuning two bands and phonograph (Model D-29 and Model D-30) features an automatic record changer. No aerial or ground are required, and a television sound jack is provided. Dover Dynaphone Model D-29 lists at \$99.50 and model D-30 lists at \$129.50. Ansley Radio Corp., 4377 Bronx Blvd., New York, N. Y.—RADIO TODAY.



Motorola console

★ "Prize Package" model 72C is a 7-tube AC super het with a 10-inch speaker, 6 push buttons, tuning 540 to 18,000 kc. The built-in loop antenna gives reception on short-wave and broadcast stations. List, \$59.95. Other models include 51B, a 5-tube AC/DC table model, 71A is a 7-tube super in walnut console,

and model 52D is a 3-power portable finished in simulated Levant grain leather. Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago.—RADIO TODAY.



Majestic table model

★ No. 1A50A is a new 5-tube set in the 1940 line. The super-het circuit operates on the 540 to 1720 kc band. Designed for 60 cycle AC operation. Walnut cabinet trimmed in maple. Majestic Radio & Television Corp., 2600 W. 50th St., Chicago.—RADIO TODAY.



Arvin portable

★ AC/DC, battery powered portable receiver uses 5 tubes in super-het circuit. Tuning range is 540 to 1,750 kc. Airplane cloth covering on three-ply case. Model 802 lists at \$24.95. Noblitt-Sparks Industries, Columbus, Ind.—RADIO TODAY.

Stromberg frequency mod receiver

★ Model 425-H is an 8-tube set housed in walnut cabinet designed to receive programs on the frequency modulation band. The high fidelity of the frequency modulation may be further realized by connecting the output of 425-H to the phonograph jack of any Labyrinth console. Stromberg-Carlson Mfg. Co., 100 Carlson Rd., Rochester, N. Y.—RADIO TODAY.



RCA farm receiver

★ Model BK-42 is a 4-tube receiver housed in a walnut veneer console. The economy blinker neon light is used to indicate when the set is in operation. Using 1.4-volt tubes, the set is convertible to AC house current operation with the use of converter unit. RCA Mfg. Co., Camden, N. J.—RADIO TODAY.

Lafayette console

★ Combination radio-phonograph features built-in loop aerials for short-wave and broadcast reception, 6-station push-button tuning, and automatic record player for 10 and 12-inch records. Eight-tube chassis tunes 530 kc to 22 mc in 3 bands. Model BB-7. Radio Wire Television, 100 6th Ave., New York, N. Y.—RADIO TODAY.



Emerson 3-power portable

★ Model DJ-310 is a 6-tube portable designed to operate on AC/DC or battery power. Using a PM speaker, the set is designed for use with mini-max batteries. Available in pigskin fabrikoid, blue and ivory trim, and in ivory and brown trim. List price, \$24.95. Emerson Radio Corp., 111 8th Ave., New York, N. Y.—RADIO TODAY.



TUNG-SOL PUTS YOU

IN THE

Driver's Seat!

Every dealer wants to run a profitable tube business FREE from cut price competition and merchandising schemes which push him around.

YOU CAN IF:

- You have a record as an established dealer maintaining standard prices for you own welfare.
- You can move an adequate tube stock three or four times a year.
- You know how to use sales helps and attractive displays to "step-up" sales.
- You are in a neighborhood free from interference with already established Tung-Sol Dealers.

If you fill the bill you qualify for the Tung-Sol plan of protected profit—the plan which puts you in the driver's seat. AND . . . you secure an adequate supply of Tung-Sol Tubes without investment. Write today.



TUNG-SOL LAMP WORKS INC.
Dept. C Radio Tube Division

SALES OFFICES: Atlanto • Chicago • Dallas
Denver • Detroit • Kansas City • Los Angeles
New York
General Offices: Newark, New Jersey

New Service Products

Manufacturers' Equipment to Make the Serviceman's Job Easier



Sprague interference locator

★ A noise locator consisting of a battery operated super-sensitive rf amplifier and audio amplifier with a combination loop and fish-pole antenna tracks down interference. A built-in loud speaker or head-phones may be used while tracing noise. Battery life of 150 hours. Average sensitivity is 40 micro-volts. Tunes bc band. List \$69.50. Sprague Products Co., North Adams, Mass.—RADIO TODAY.

cuit. For operation on 115 volts 60 cycles. Million Radio and Television, 685 W. Ohio St., Chicago.—RADIO TODAY.



Hickok tube tester

★ Dynamic mutual conductance tube tester with three ranges of micro-mhos, 0-3,000-6,000-15,000. No. 530 tests all tubes, octal, loktal, ballast up to 117-volt filament, and gas tubes such as OZ4. Available in both counter and portable type. Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland, Ohio.—RADIO TODAY.



Radio City sig generator

★ Model 702 provides fundamental frequencies from 95 to 25 mc and harmonic range to 100 mc. Attenuator and rf circuits double shielded. Sine-wave, 400-cycle modulation provided with built-in oscillator. RF attenuator graduated in microvolts over range of 1 micro-volt to ½-volt. Radio City Products Co., 88 Park Place, New York, N. Y.—RADIO TODAY.



Philco capacitor tester

★ A service instrument for checking all capacities from 250 mmfd. to 32 mfd. Designed for 115-volt operation, 60 cycles. Requires 10-volt AC meter. Model 010. Philco Radio & Television Corp., Tioga and C Sts., Philadelphia.—RADIO TODAY.

GE battery tester

★ Voltmeter and resistance test prod are combined to test storage batteries at normal starting load. Prod will fit any battery cell. Two per cent accuracy on voltage readings. General Electric Co., Schenectady, N. Y.—RADIO TODAY.



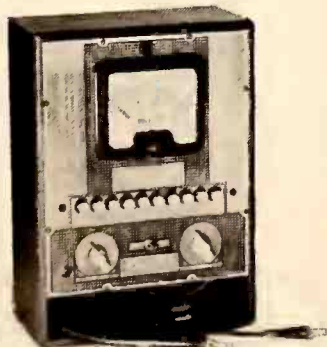
Weston tube-battery tester

★ Model 777 tester applies the correct load to 1.5, 6, 45, and 90-volt batteries used in portable receivers, and checks the batteries under actual load conditions. Ballast tubes, gas rectifiers, loktal tubes of all types, as well as conventional types are tested, with filament voltages to 117 volts. Available in portable and counter types. Weston Electrical Instrument Corp., Newark, N. J.—RADIO TODAY.



Clough Brengle multi-meter

★ Model 220 tester is designed for safety in measuring voltages to 10,000 volts DC and 7,500 volts AC. Test prod has finger guard to prevent contact with point. Sensitivity on DC is 20,000 ohms per volt. AC ranges are temperature compensated. Reads db level from -16 to +42. Resistance range from ½ ohm to 30 megohms. Clough Brengle Co., 5501 Broadway, Chicago.—RADIO TODAY.



Million vacuum tube v.m.

★ Wide range vacuum tube v.m. meter has ranges from 3 volts to 3,000 volts in 9 scales. Push button selection. Measures AF, RF, and IF voltages without disturbing cir-

Na-Ald grid cap

★ New grid cap for metal tubes has insulated fibre insert to prevent shorting of grid lead. Bushing action prevents the cap from cutting out grid lead if accidentally turned against wire. Alden Products Co., 715 Center St., Brockton, Mass.

Consolidated volume control

★ Smaller diameter and thinner controls for use in midget sets—have 3-inch shafts grooved at ¼-inch intervals for cutting to length. Resistance ranges from 1,000 to 2 meg. Consolidated Wire & Assoc. Corps., 516 S. Peoria St., Chicago.

TELL 'EM TO SELL 'EM

(Continued from page 19)

Your store is different.

You will have lots of thoughts of your own.

If you will cultivate the habit of writing them down when they occur to you, and filing them in one place, you will always have some ready when you need them.

MAIL REGULARLY

With a mailing list which is accurate, merchandise which is wanted, and selling ideas which are sound, it only remains to take your message home.

Mailings should be made at least once a month, every two weeks is better, but weekly is probably too frequent to be sustained for any long period.

At least one mailing every two months to your entire list should be about you, your store, your policies.

Many dealers have been very successful in post-card direct mail, in promoting a new model, by putting just one selling point on a weekly post-card, until the whole selling story has been told.

Calling attention to outstanding broadcasts and relating them to new radios, or servicing the old also is productive of business.

A series of connected mailings is usually more productive than a similar number of unrelated mailings.

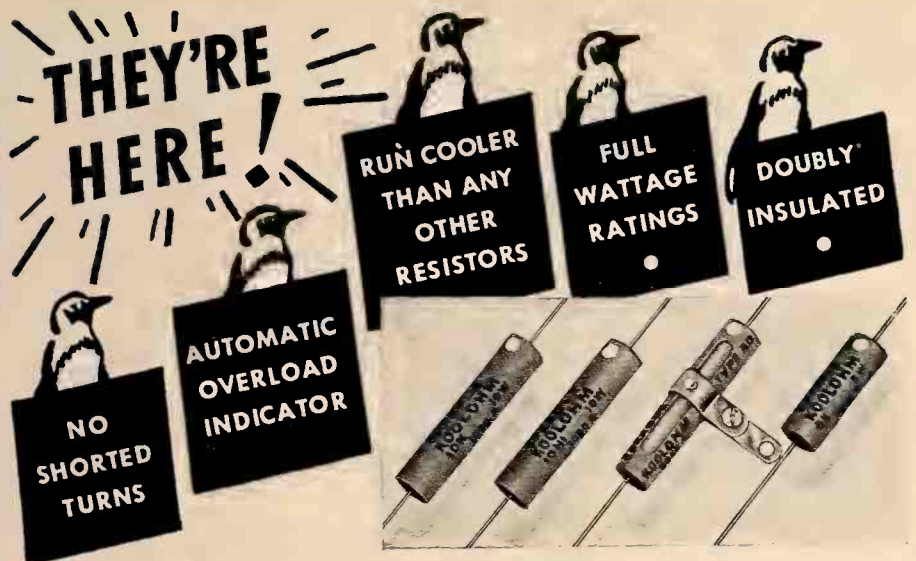
Your own post-cards or letters, type-written, mimeographed, multigraphed, printed, or made on a card-verstiser, will be far better than the booklets, folders, or leaflets prepared by the manufacturer, in most cases, because on the latter your name and your store has to be subordinated to a product name which too often is described in superlative terms or is too blatant.

ADVERTISING THE TOOL TO BUILD SALES

When using both newspapers and direct mail, it is always psychologically good to let your own customers in on your sales or new product announcements a few days before your window or newspaper ads break, and tell them of this preview preference.

With policies that are sound, merchandise that is good, and consistent advertising which is always honest, good will and sales must become bigger and better year by year—though don't think that any amount of advertising can make up for policies, methods, or merchandise which does not satisfy your customers.

Advertising is the tool for telling people why your customers are satisfied and like to buy from you. You must provide the material for this tool to work with.



SPRAGUE KOOLOHM RESISTORS

The Biggest Improvement in Wire Wounds in 20 Years

Note the above exclusive features of Sprague Koolohm Resistors—and they're not all! The 9 points of outstanding Koolohm superiority also include:

- Larger wire size for every value.
- Non-inductive resistors—zero inductance at 50 mc. and distributed capacity of only 2 mmfd.
- Every bit of wire insulated BEFORE winding with a new resistance coating—further protected by a dark brown ceramic outer shell. The only truly insulated wire wounds on the market.
- Resistance value remains constant whether exposed to moisture or heat. No "swimming" of turns—no shorted resistance values.

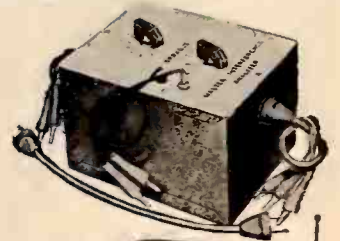
No cements or brittle enamels on Koolohms! Koolohm wire insulation allows units to be layer wound with larger wire. Values are guaranteed accurate to 5% or better, and remain constant. Now available in 5-watt fixed types; 10-watt fixed; 10-watt non-inductive and 10-watt adjustable. Sold at ordinary resistor prices. The greatest resistor buys on the market. Your jobber has them!

CASH IN ON INTERFERENCE ELIMINATION



Now—it is made easy for you to build new business in a growing, non-competitive field! For years, Sprague engineers have been developing practical methods for eliminating man-made radio noise from every type of electrical appliance. The Sprague Manual of Radio interference just off the press is the result. Tells you what to do and exactly how to do it. Easy to understand—indispensable in your work. 24 pages—fully illustrated—more than 50 diagrams. Only 25c net from Sprague jobbers or direct from us.

● Shown here are the new Sprague Master Radio Interference Analyzer (above) and the new Sprague Interference Locator (below). Low in price—easy to use—fully practical. Write for details on the complete Sprague Interference Elimination Plan.



SPRAGUE



SAVE TIME, MONEY AND SPACE . . .

It's not only Scotch money-saving instinct—it's good business that leads more servicemen to use more Sprague Atoms than any other midget dry electrolytics on the market today. Atoms are smaller—more dependable—made in more single and dual capacities—have lower leakage—withstand higher surges—are absolutely protected against blow-ups. Use 'em anywhere. Atoms stand the gaff!

SPRAGUE PRODUCTS COMPANY
North Adams, Mass.

DEALERS PREFER TO SELL PHILCO!

Reasons given by dealers in a national survey

1. Greatest Public Acceptance
2. **Most Widely Advertised**
3. Greatest Improvements
4. Lowest Service
5. Most Complete Line
6. Easiest to Sell
7. Greatest Market
8. Finest Performance
9. More Satisfied Customers
10. Fastest Selling Line
11. Better Parts Service
12. Greater Sales Appeal
13. Sound Factory Policies
14. Most for the Money

We like Philco best because of its well-deserved reputation and uninterrupted consumer advertising.
THE BUESCHER'S CO., Cleveland, Ohio.

We give Philco the utmost sales effort because Philco backs us up with continuous year-round advertising to the consumer.
HAUSCHILD MUSIC CO., Victoria, Texas.

The Philco line is so well known and highly advertised that the public demands it.
MARCONI BROS. INC., New York, N. Y.

The all-year consumer advertising of Philco makes it profitable and preferable for us to push this line.
NOESKE RADIO & APPLIANCE CO., Freeport, Ill.

We prefer to sell Philco because they have built prestige by building good radios backed by good year-round advertising.
T. R. BANKS RADIO SERVICE, Charlotte, N. C.

We regard Philco for 1940 and Philco's great advertising campaign to the consumer as the main essentials of a profitable dealer business in radio.
PARK SLOPE TALKING MACHINE SHOP, INC., Brooklyn, N. Y.

Philco's continuous advertising to the consumer is one of the main reasons why we always push Philco sets.
CANDIOTO PIANO CO., Lexington, Kentucky.

Our preference goes to Philco for many reasons, among which is the 12-month advertising to the consumer -- a big factor in selling at retail.
NEWMARK & LEWIS, INC., Hempstead, N. Y.

"Most W

One of 14 Reasons

**"The biggest selling and adv
the industry," say dealers eve
survey shows Year-Round Ad
factor in overwhelming dea**

Dealers everywhere, in every type of market list Philco's powerful, year-round advertising as one of the 14 reasons for Philco sales leadership. In an impartial nationwide survey, one after another speaks of Philco's commanding advertising support as the greatest in the industry, as one of the most powerful of the factors that make Philco the most salable, most profitable line in the radio field.

Yes, throughout its 10 years of leadership Philco has recognized its obligation to promote business for Philco dealers. The job has never been left to you alone . . . Philco has always done its part in national advertising, local advertising and hard-hitting promotions to *sell radio* and to drive customers into the dealer's store. The current, highly successful "Philco Anniversary Specials" promotion is an example of Philco's continuous promotional activity in behalf of Philco dealers.

And so in every other factor that goes to make up a complete, profitable merchandise and sales picture. Read the list made up from the comments of America's radio dealers, large and small. If you want the answer to Philco leadership, *there it is* . . . broken down into its 14 basic points!

For 1940, again, your No. 1 profit opportunity lies with Philco. The hottest line in its history . . . new, exclusive inventions . . . keyed to public demand in design, performance and price. And a *complete* line, from table models to radio-phonographs that gives you the sell-up opportunity you need to make money in radio.

For turnover, for volume, for profit . . . concentrate on Philco

Philco All Year 'Round for Profits All

Most Advertised"

Dealers Look to Philco for Radio's Biggest Profits

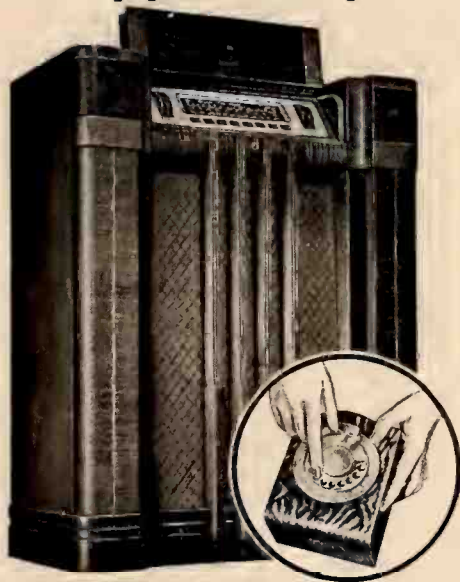
support in
Impartial
a leading
reference for

PHILCO

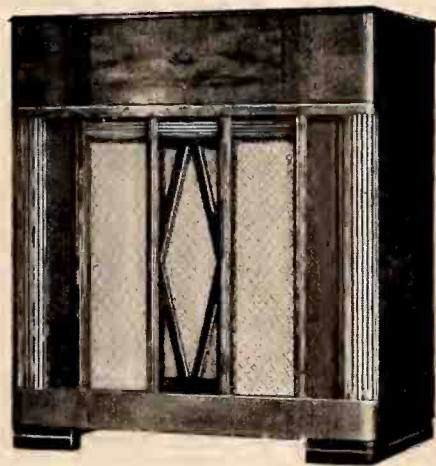
Sell Up! Today, more than ever, Philco Sell-Up models give you your best opportunity to Boost Your Profits



PHILCO 195XX One of a great variety of lovely console models styled to suit every purse and preference. 10 tubes, Built-in Super Aerial System, American and Foreign reception, Electric Push-Button Tuning. Every feature the *quality* buyer wants!



PHILCO 215RX with Wireless Remote Control The perfect "sell-up" model in the higher price brackets. 12 tubes, American and Foreign reception, Built-in Super Aerial System—plus Wireless Remote Control of favorite stations . . . all at a new low price!



PHILCO 508 Radio-Phonograph One of a complete selection of beautiful, super-performing radio-phonographs. Automatic Record Changer for 12 records. Doubled sound output for finer recorded tone. American and Foreign radio reception, Electric Push-Button Tuning, Built-in Super Aerial System. Another Philco profit-maker.

Every 1940 Philco Is Built to Receive TELEVISION SOUND . . . the Wireless Way!

ONLY PHILCO gives you ALL 3

Philco Built-in Super Aerial System, found only in the Philco, is more than a mere built-in aerial. It is a combination of 5 important features: 1, a specially shielded, direct-loop Antenna; 2, the Costly R. F. Stage; 3, Newly Invented Filament Tubes. And, in foreign reception models; 4, a second Short-Wave Antenna; 5, the triple-power No. 1232 Vision Tube. Together, this *complete system* gives you:

- 1. "PLUG IN AND PLAY" CONVENIENCE** No aerial or ground wires to install. Plug in anywhere and play.
- 2. NEW PURITY OF TONE** Greater freedom from power line noises and man-made static. More enjoyable reception, even in noisy locations.
- 3. SUPER-POWER** Even gets *foreign* reception without an outside aerial. *Amazing performance!*

Year 'Round

HOME RADIO • AUTO RADIO • TELEVISION • PHONOGRAPHS • RADIO TUBES
PARTS • REFRIGERATORS • AIR CONDITIONERS • DRY BATTERIES



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11. Better Parts Service
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13. Sound Factory Policies
14. Most for the Money

We like Philco best because of its well-deserved reputation and uninterrupted consumer advertising.

THE BUSHBERRY CO., Cleveland, Ohio.

We give Philco the most sales effort because Philco backs us up with continuous year-round advertising to the consumer.

BAIRDCHILD MUSIC CO., Vicksburg, Texas.

The Philco line is so well known and highly advertised that the public demands it.

ALBERT BROS. INC., New York, N. Y.

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ROBBER RADIO & APPLIANCE CO., Trenton, Ill.

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T. R. BANGS RADIO SERVICE, Charlotte, N. C.

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FARK SLOPE TALKING MACHINE SHOP, INC., Brooklyn, N. Y.

Philco's continuous advertising to the consumer is one of the main reasons why we always push Philco sets.

CANLITO FILMO CO., Lexington, Kentucky.

Our preference goes to Philco for many reasons, among which is the all-year advertising to the consumer—a big factor in selling at retail.

MEYER & LEVITS, INC., Hempstead, N. Y.

"Most Widely Advertised"

One of 14 Reasons Why Dealers Look to Philco for Radio's Biggest Profits

"The biggest selling and advertising support in the industry," say dealers everywhere. Impartial survey shows Year-Round Advertising a leading factor in overwhelming dealer preference for

PHILCO

Dealers everywhere, in every type of market, list Philco's powerful, year-round advertising as one of the 14 reasons for Philco's sales leadership. In an impartial nationwide survey, one after another speaks of Philco's commanding advertising support, the greatest in the industry, as one of the most powerful of the factors that make Philco the most salable, most profitable line in the radio field.

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No aerial or ground wires to install. Plug in anywhere and play.
2. **NEW PURITY OF TONE** Greater freedom from power line noise and man-made static. More enjoyable reception, even in noisy locations.
3. **SUPER-POWER** Even gets foreign reception without an outside aerial. Amazing performance!

Philco All Year 'Round for Profits All Year 'Round

PHONE BOOKS • INFO BUREAU • TELEVISION • NEWS SERVICE • BROADCAST TUBES
PARTS • SUBSTITUTIONS • AIR CONDITIONING • WAX MOUNTING

PRESTO PRESENTS



**A New Low-priced
SOUND RECORDER
with 5 EXCLUSIVE
SELLING POINTS**

1. Dual speed operation 78 and 33 1/3 r.p.m. The only two-speed machine in its price class.
2. Sensitive microphone and full size adjustable floor stand.
3. Rubber-rimmed turntable driven directly by motor pulley. Uses no idler wheels or rubber pulleys. Nothing to wear out.
4. Operates as public address system. You can hear your program before you record.
5. Safety cam lever lowers cutting head gently. Prevents breaking costly sapphire cutting needles.

MODEL 12J RECORDER

Price Complete

\$184.50*

*\$194.50 Denver and West

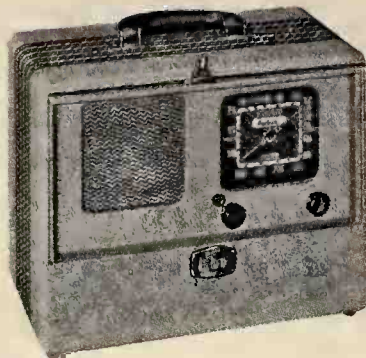
Write for Literature

HOW DEALERS SELL THE PRESTO RECORDER
—This new booklet tells you who your prospects are, how to reach them, why they buy recording equipment. Illustrates form letters, direct mail pieces, newspaper mats, window and counter display material. Describes numerous promotional stunts that dealers have used successfully to sell recorders and personal recordings. A complete merchandising manual that will boost recorder sales for you.

Your Copy is Waiting • Write for Booklet Today

PRESTO RECORDING CORPORATION
242 West 55th Street, New York, N. Y.

New Things



Andrea "universal" portable

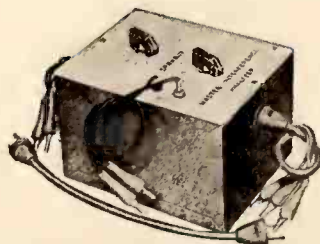
★ AC-DC-battery operated portable has power output of 260 milliwatts. Battery life approximately 300 hours. Dust proof speaker, large size chassis. Model 21-F-5 (illustrated) in airplane luggage cloth and 21A-F-5 in alligator fabricoid. List \$29.95. Andrea Radio Corp., 4820-48th Ave., Woodside, N. Y.—RADIO TODAY.

Solar set checker

★ New Exam-eter contains peak voltmeter, RF alignment indicator, output meter, capacitance and resistance bridge, power factor indicator, and leakage and continuity checker. Inclined panel mounting for easy readings and detachable case lid. Solar Mfg. Corp., Bayonne, N. J.—RADIO TODAY.

Eicor motor-generator

★ 450-watt AC alternator driven by an air-cooled gasoline engine delivers current at 110 volts and 60 cycles. Electric push-button starting is built-in and remote control is available for the AC units. Measures 17 x 15 x 17 inches. Weight, 90 lbs. Eicor, Inc., 515 S. Laflin St., Chicago, Ill.—RADIO TODAY.



Sprague interference analyzer

★ Modernized analyzer makes a total of sixty different filter combinations possible for eliminating interference. Rotating switches connect different filter circuits into disturbing equipment circuit. List price \$39.90. Chokes will carry 20 amps. Sprague Products Co., N. Adams, Mass.—RADIO TODAY.

Pioneer motor generator

★ Five kw power plant is completely enclosed in a sheet metal housing. 60-cycle, 1800 RPM generator runs in grease-sealed ball-bearings. Rheostat, voltmeter and switchbox are standard equipment. Filter and shielding available. Pioneer Gen-E-Motor Corp., 466 W. Superior St., Chicago, Ill.—RADIO TODAY.



Cornell-Dubilier capacitors

★ Small tubular by-pass and filter condensers with mounting strap are convenient to mount. Capacitors come in dual units with common negative lead in voltage ratings of 25 to 450 volts, and capacity ratings from 8-8 to 20-20 mfd. Cornell-Dubilier Electric Corp., S. Plainfield, N. J.—RADIO TODAY.



General power pack

★ Replacing batteries in the 2-volt farm radios, Model L power supply delivers 2 volts A, up to 135 volts B, and variable C voltage to 22 1/2 volts. Easily installed by serviceman. Unit operates from 115-volt, 60-cycle power. List price \$9.95. General Transformer Corp., 1250 W. Van Buren St., Chicago, Ill.—RADIO TODAY.

Na-Ald power socket

★ Sub panel mounted AC outlet for use in radio chassis to permit quick connection of phonograph motors, dial lights, etc. Bakelite body, metal mounting plate, and lug terminals. Alden Products Co., 715 Center St., Brockton, Mass.—RADIO TODAY.

Universal carbon mike

★ Small size carbon mike of high sensitivity for use in inter-office communicators, detecto-phones, etc. Spot center diaphragm, output, —38 db. Model W. Universal Microphone Co., Inglewood, Calif.—**RADIO TODAY.**



ATA oscillator

★ Wide range signal generator covering 100 kc. to 63 mc. with error of less than 1/2% of 1% on the broadcast and IF bands and 2% on short-wave bands. Pure sine wave modulated RF is attenuated with non-inductive pads. Separate jacks make audio and RF available. Model 900 for 115 volts AC/DC and 900A for 220 volts AC/DC. Price \$17.95. Approved Technical Apparatus Co., 57 1/2 Dey St., New York, N. Y.—**RADIO TODAY.**

Simpson set tester

★ Model 320 features a 9-inch meter with fifty ranges. Nine voltage ranges from 0 to 3,000 volts both AC and DC at 1,000 ohms per volt. Six current scales from 0 to 750 ma and 0 to 15 amps. Meter is illuminated by two 6-volt bulbs. Resistance may be measured to 50 megs and four ranges of capacity and seven ranges of decibels are included. Simpson Electric Co., 5216 Kinzie St., Chicago.—**RADIO TODAY.**



Arvin midget model

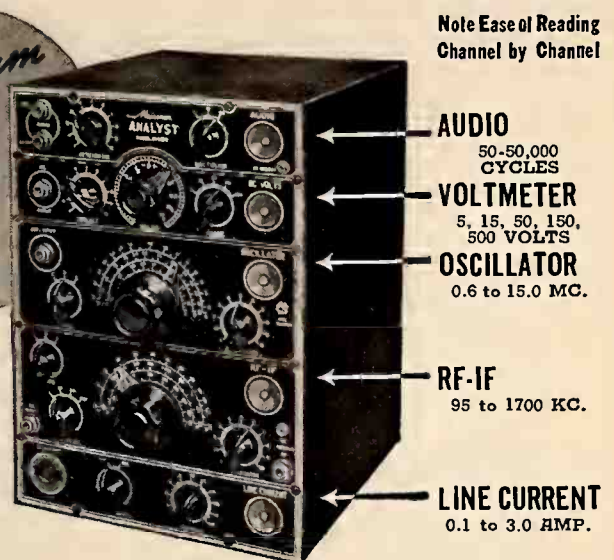
★ Tiny model 402 uses three tubes and comes in either ivory or walnut finished unbreakable cabinet. Four-inch dynamic speaker delivers 2 watts. No filament dropping resistor used; Underwriters' approved. List, \$6.95. Noblitt-Sparks Industries, Columbus, Ind.—**RADIO TODAY.**

Save Time and Money with THE MEISSNER ANALYST

*In Kit form
at about
half the
price*

SERVICES ANY TYPE OF RECEIVER

\$60 NET



Note Ease of Reading
Channel by Channel

The Meissner ANALYST is not only highly efficient—covering every conceivable phase of signal testing—but it is surprisingly easy to read and operate. This up-to-the-minute instrument will work wonders in raising the standard of service in your shop. It will take the kinks out of your toughest servicing problems . . . step up your efficiency . . . save valuable time . . . increase your profits.

It accurately measures both control and operating voltages without affecting the operation of the set. Channels can be tested individually or simultaneously. Reading is greatly simplified. There's an individual panel for each channel.

And best of all, you buy the ANALYST in KIT FORM . . . Save nearly HALF the cost of a factory-wired set of comparable quality and efficiency. And at the same time acquire a fundamental knowledge of this instrument and what it will do for you that could not otherwise be obtained by weeks of study and experiment.

Get the facts on this revolutionary TIME and TROUBLE SAVER . . . See the Meissner ANALYST at your Parts Jobber's—or mail coupon below for FREE FOLDER . . . It tells the whole story!

**THE NEW IMPROVED MEISSNER
I. F. TRANSFORMER**

\$1.00 LIST

Molded low-loss plastic trimmer—drift guaranteed less than ceramic.

Molded low-loss plastic coil form—more uniform coils impervious to humidity—less corrosion.

Leads—new underwriters' approved live rubber covered—heat resistant to 167 F.

Litz-wound Hi-Q coils impregnated in Meissner Hi-Q Cement.

Aluminum can—size 1 1/2" square x 2 1/2" long—small enough to fit in any set.

New Time-Payment Plan

You can now buy the ANALYST and other Meissner Products on TIME. Ask your Parts Jobber or write us for details.

For superior performance in any type of receiver—try this remarkable mid-get I. F. Transformer. Simplified construction permits maximum space efficiency and a lower cost. Only 2 1/2" long—1 1/4" square. Complete range of operating frequencies. In-put, inter-stage or out-put.

PASTE ON PENNY POSTCARD

MEISSNER MFG. CO. Dept. T-10
Mt. Carmel, Ill.

Mail Folder on the Meissner ANALYST.
Also your complete '39-'40 Catalog.

Name

Address

City..... State.....



RCA Record-Radio "Package"

A combination "package" including a group of records, a rack and a table radio-phonograph has been announced by Irving Sarnoff, of the Bruno-New York Co., RCA Victor distributors in New York City. The Victrola plays both 10 and 12 inch records with the top cover down.

"Sponsored by the world's largest manufacturer of radio and phonograph instruments, the combination plan presents a total of \$45.70 worth of merchandise including, in addition to the Victrola, a quantity of records, a record storage rack, and a subscription to a famous music magazine, all at the special price of \$29.95," Sarnoff said. "The arrangement places the enjoyment of recorded music within the reach of every purse."

The Victrola is equipped with a streamlined tone arm and crystal pick-up. The radio tunes domestic broadcast and police bands. List price of the instrument separately is given as \$39.95.

The records included in the "package" have been selected as among those which should be in every American home. Together with the record storage rack, they have a value of \$5.25. In addition, the combination includes a three-months' subscription to the Victor Record Review.

Farnsworth Steps Up Production

Production of radio receivers and combination of radio-phonographs in the Marion, Ind. plant of Farnsworth Television & Radio Corporation, which had been moving along at an average rate of 900 sets a day, has been stepped up to more than 1,000 with the addition of a fourth assembly line, which is turning out 10-tube chassis. Of the three other lines, one is making 7-tube sets and two are producing 10-tube receivers.

Addition of the new assembly line raised the number of office and factory workers at the Marion plant approximately to 700 persons and greatly accelerated the flow of Farnsworth radios from the factory to distributors and dealers throughout the country. At the same time, the number of persons on the company's payroll at the Fort Wayne plant was 181.

Dealer showings held during the last half of September included those by Farrar-Brown Company, Inc., Portland, Me.; Crest, Inc., St. Louis; R. D. K. Distribution Company, Louisville; Straus-Bodenheimer Company, Houston, and Smith and Hirschmann, Rochester, N. Y.

Among the recently appointed Farnsworth distributors are Texas Norge Sales, Dallas; South Texas Appliance Corp., San Antonio; Jensen-Byrd Co., Spokane, and Valier Sales Co., La-Crosse, Wis.

Appointments of distributors are pending at New Orleans, Memphis, Omaha, Minneapolis, Salt Lake City, Los Angeles, Seattle and Atlanta.

Philco Models Adopt Furniture Style

A new type of radio furniture, designed to meet the demands of those who favor flowing lines, has been adopted for many of the new Philco radio models, according to Sayre M. Ramsdell, vice-president of Philco.

"This innovation in radio styling," said Ramsdell, "has been appropriately named the Cascade type, because the rounded undulating lines continue their graceful flow and are not interrupted by sharp angles.

"In addition to the great service the radio performs," said Mr. Ramsdell, "it probably is the most universal piece of furniture in the American home today. Because of this, it has become a responsibility of the radio industry to see that radio design takes this fact into consideration."

"The final result of continuous sur-

veys," concluded Ramsdell, "proves that the public no longer favors awkward, almost formless lines, and that, in designing the new Cascade type, Philco has skillfully blended a radio cabinet that is tailored to the general public's expressed preference."

Rawhide for Radio Cabinets



Gutmann rawhide on Churchill cabinet.

Beauty, distinction and craftsmanship rarely are combined so interestingly as they are in this radio cabinet covered with "Genuine Rawhide by Gutmann." This rawhide is made from the hides of carefully selected cattle, specially processed to make it practical for covering radio cabinets. To the radio setmaker who wishes to offer his trade something really individual, eye catching and handsome beyond the usual, rawhide in the "natural" or in colors offers interesting opportunities. The cabinet is a product of the Churchill Cabinet Company, Chicago . . . and the rawhide was supplied by Gutmann & Company, Inc., Chicago. Write either or both for details.

Leon Adelman on "grand tour" for Cornell-Dubilier

No press agent for Ringling ever took to the road with a busier schedule than Leon L. Adelman this Fall. The genial Leon, who heads up sales and advertising for Cornell-Dubilier, was off in September on a whirlwind tour that will take him, before January 2, into practically every state east of the Rockies, with important stopovers in each. There is even a provision in this streamlined sales promotion for a Christmas holiday in Miami, Fla.

"We like to think of Mr. Adelman setting out on this *tour de force* of his weighted down somewhat more than usual with skis and swimming tube, a good warm overcoat and a couple of summer tropicals," writes B. M. Reiss. "We like to think of him back at his desk, day after New Year's, brown as a berry, except for those two telltale patches of white around the jobs where his ear-muffs were. We don't envy Leon his travels. We prefer working here at home where you suffocate and freeze pretty much on schedule. But then, we haven't the energy, aggressiveness and zest for sales promotion of Cornell-Dubilier's No. 1 Salesman. Few men have."



This display of Majestic radios advertised with a quarter page ad. in the Chicago Tribune boosted radio sales to a three year high for Chicago's Boston Store, reports Bill Meutsch, radio buyer.

Selling Sound

OCTOBER, 1939

PUBLISHED SEMI-ANNUALLY AS A SECTION OF "RADIO TODAY"

1940 Equipment



8 Watt Amplifier

★ Incorporates selection of output impedances; field supply independent of filter circuit; individual control of microphone and phono for complete mixing; high gain for high impedance crystal, dynamic and velocity mikes. \$39.50 list—Thordarson.



20 Watt Amplifier

★ Powerful. Compact. Four-stage circuit incorporates inverse feedback. Mixing of microphone and phono channels is free from cross-talk or interaction. Separate bass and treble tone controls. Available in 2-speaker carrying case. \$75.00 list—Thordarson.



45 Watt Amplifier

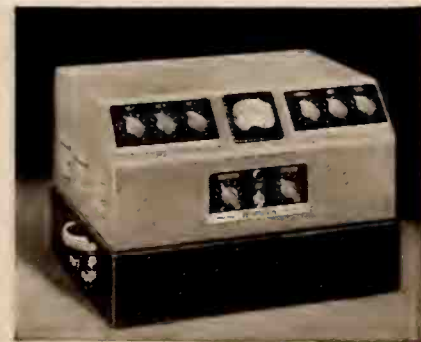
★ Two double range tone controls enable the operator to increase or decrease the low frequencies as well as independently increase or decrease high frequencies at the same time. Many other unusual features. \$140.00 list—Thordarson.

Thordarson Leads
Forty-four years building the finest transformers in the world, has given Thordarson the technical background necessary for the production of quality Sound Equipment. These Thordarson Amplifiers are truly Sound Leaders of Today.



28 Watt Mobile

★ Compact "Universal" portable operates from 115v AC or 6v storage battery. Standby switch leaves filaments connected—eliminates warm up period. Three input circuits with separate gain controls. Built in phono-motor and pickup. \$180.00 list—Thordarson.



75 Watt Amplifier

★ Three high-impedance, high-gain microphone channels are separately controlled—may be mixed together or with the high-impedance phono channels. Two phono inputs. Two separate channels incorporate compressor and expander circuits. \$180.00 list—Thordarson.



14 Watt Amplifier

★ Low frequency booster circuit which accentuates tones in the vicinity of 40 to 50 c.p.s. Reproduces with true fidelity. Except for the bass boost the frequency response varies less than ± 1 db from 30 to 15,000 c.p.s. \$57.50 list—Thordarson.



30 Watt Amplifier

★ In handsome walnut cabinet. Four-stage circuit with inverse feedback insures "distortionless" operation at full output. Output impedances match almost any speaker combination. \$110.00 list—Thordarson.



20 Watt Amplifier

★ Deluxe equipment. Four-stage amplifier circuit featuring a unique mixer circuit and doubly effective inverse feedback. Independent mike and phono controls mix without interacting. Booster circuit emphasizes frequencies below 100 cycles. \$79.50 list—Thordarson.

For complete technical description of these amplifiers, ask your distributor for Catalog 600-D published by Thordarson Electric Mfg. Co

Selling Sound

Many uses for sound systems offer opportunity to serviceman and dealer. How to get started in this profit-field.

Sound installations and the renting of equipment have become important parts of the radio-man's business.

Modern sound reinforcing equipment so improves the ability to hear, understand, and enjoy group entertainment that it has become a very necessary part of public gatherings.

Any good radio-serviceman with a knowledge of acoustics can step into the lucrative sound field. Hundreds of applications present themselves, and even in small towns the radio-service-sound man has opportunities offered in few other occupations.

PROFIT WITH SMALL JOBS

On other pages of RADIO TODAY are typical installations that provide the profit gravy, but the bread and butter money is to be found in the everyday applications which the sound man can promote with a little effort.

Pictured on this page are three of the many different uses for sound equipment.

The method to use in tackling a school job is to analyze the requirements of the installation, draw up a set of plans for the type and amount of equipment necessary, and present a concrete layout for the job. Mere approach with the idea that "the school could use a sound system" is doomed to failure.

DOUBLE-DUTY EQUIPMENT

The serviceman or dealer can select one of the many good sound systems on the market and develop the public-address possibilities in his area.

Several manufacturers are offering systems that operate from 6-volt DC sources and 110-volt AC current. Such an amplifier will serve double-duty as a mobile and fixed system.

In larger centers, several P.A. systems can be rented to churches, schools, lodge-clubs, and many other organizations. For smaller towns, one system may be sufficient for the requirements.



Outdoor concerts are better with a good sound system. Here, Rubinoff uses Kontak mike to entertain crowd at Moline, Ill.

Renting of P.A. equipment can be as profitable as sound installations. Where several systems are being rented, a group of young men can be trained as operators. By using trained men, the system will perform better, and bring in new business.

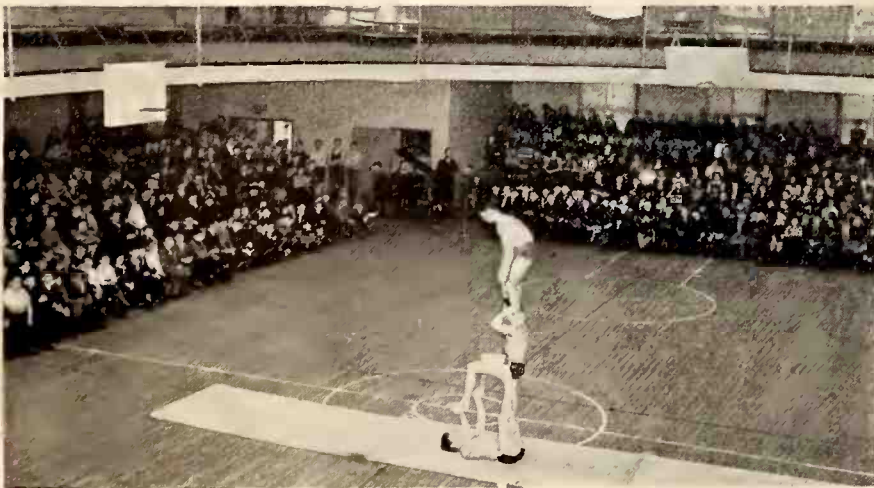
Survey the prospects for "better sound," select a good P.A. system that is applicable to your needs, and thus develop your profits.

MANY OUTDOOR JOBS

The outdoor jobs for sound equipment are manifold. Fall festivals, political meetings, musical concerts, and auctions are but a few of the possibilities.

The picture of Rubinoff playing his violin for the Mississippi Valley Music Festival is typical of this popular field for sound equipment. Protected from the rain by an umbrella, Rubinoff used an Amperite Kontak mike through a sound system installed by E. H. Gordon of Moline, Ill.

(Continued on page 50)



School functions require sound reinforcement for ample coverage. Chandelier type speakers cover this gym.

Schools and colleges are perfect prospects for sound equipment from both the renting and buying standpoint.

With the football season here and basket-ball a few months away, school athletic fields, and gymnasiums need amplifying equipment. The gym pictured here is sound-covered by chandelier-type Atlas speakers. School dramatics are greatly aided with a P.A. system that can offer realism to amateur plays with sound-effects. Class rooms, lecture halls, and cafeterias are more efficient with a radio-sound system.

Mobile sound systems are money makers in elections, advertising campaigns, and safety drives.





J. R. Beebe, Thordarson asst sales mgr.

Beebe to Thordarson Post

Thordarson Electric Mfg. Co., has announced the appointment of J. R. Beebe as assistant sales manager. Beebe has been representing Thordarson in the middle western states since 1934.

Wilcox-Gay Jobbers

Distributor appointments for exclusive territories announced by Wilcox-Gay Corp. this month include: York Supply Co., 517 W. Third St., Cincinnati, O.; Appliances, Inc., 238 N. Third St., Columbus, O.; Ohio Valley Sound Service Co., 2024 Pennsylvania St., Evansville, Ind.; National Mill Supply Co., Fort Wayne, Ind.; and the Geo. D. Barbey Co., 434 Walnut St., Reading, Pa.

Ulrich Heads Hytron Renewal-Tube Sales

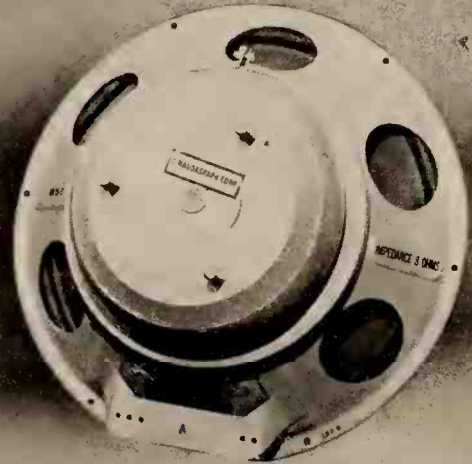
Vinton K. Ulrich, sales manager of the Hytronic Laboratories Division, has been appointed renewal-tube sales manager of the Hytron Corporation, Salem, Mass.

As sales manager, Mr. Ulrich will work with Hytron jobbers in setting up a more stabilized condition in the replacement tube field. As of October 2, the Hytron Corporation announced a schedule of new low list prices set up to make the sale of tubes profitable to everyone concerned, thus giving the public more value for their money.

Furthermore, the Hytron Corporation is advocating that service charges and labor be charged for as such. To further help the serviceman, the Hytron Bantam "GT" series tubes are now coming equipped with metal shields so as to make these tubes interchangeable with metal types as well as the regular "G" series tubes. In this way it is possible to use one tube to replace what formerly required three tubes.

"The reduction in inventory, made possible by using the Hytron Bantam tubes," Mr. Ulrich points out, "results in additional profit for the distributors, dealers and servicemen alike, since by reducing the stock, turnover is greatly speeded up."

IN CINAUDAGRAPH SPEAKERS



it's what you DON'T SEE
that counts most!

If you're any judge of materials and workmanship, you can recognize quality in the Cinaudagraph speaker. But there's more to Cinaudagraph's success than what you see on the surface. Actually, it's what stands behind this complete line of permanent magnet and electro-dynamic speakers that counts most. It's the years of research and experiment, of design and assembly and rigid laboratory testing—all performed under one roof by trained engineers expertly supervised every step of the way. *That's* why today, Cinaudagraph is the world's outstanding speaker line.

Profits come biggest where volume sales come quickest. The turnover is rapid on Cinaudagraph speakers because every sale means a 100% satisfied customer. And you know what they say about satisfied customers—"your best advertisement".

There is a Cinaudagraph speaker for every indoor and outdoor job, in both electro-dynamics and permanent magnets from 5" to 27". Send for new catalog today.

CINAUDAGRAPH CORPORATION
STAMFORD • CONNECTICUT



Hotel dining and dancing spots need high-quality sound systems. Here, flat-baffled speakers on either side of the band stand give wide-angle sound coverage. Velocity mike used for vocal pick-up. "V" concentration of sound covers sides and rear.

Typical Sound Installations

2. Night Clubs and Restaurants

Equipment and methods to use in these profitable jobs

The increasing popularity of night-clubs, road-side restaurants, and similar entertainment - with - your - meal spots, makes the use of good sound systems a necessity.

Dinner music, vocal entertainment, and announcements are more enjoyable when they can be heard without effort. Good sound coverage puts the entire room on a parity with the best "ring-side" seat. No longer need certain parts of the room be shunned because of poor acoustics, for well planned sound systems can overcome these defects.

Lodge clubs are excellent prospects for sound systems because of the widespread activity they embrace. Dances, plays, and initiations, are but a few of the things that can be more successful with sound equipment.

Skating rinks require PA systems just as much as they need skates. The extremely high noise level makes it necessary to use moderate to high power equipment with diversified sound outlets.

MANY NEEDS FOR SOUND

Night-clubs, restaurants, and lodge-clubs need good sound re-inforcing systems for one or more of the following reasons.

1. Modernistic room-layouts and decorative materials are "acoustic hazards." Low ceilings, hard finished floors, etc., all affect natural sound coverage.

2. Usual noise-level is too high for un-aided voices, small orchestras, and solo instruments.

3. The dance floor being near the orchestra dais, places the audience so far back that much of the aural entertainment is lost.

4. The tonal quality, strength and versatility of a PA system fills a definite need in this field of public entertainment.

5. A good sound system attracts customers because hearing is a pleasure and not a task.

CONSIDER TYPE OF SERVICE

The type of service into which a sound reinforcing system is going and the type of people who are going to operate it, are very important points to consider when selecting and installing this equipment.

Equipment used in night-club type of service is generally handled by un-trained personnel. The system is turned on early in the evening and operated continuously into the small hours of the morning. These facts call for well designed amplifiers, speakers, and microphones. The factor of safety for such material should be high to give long-range satisfaction.

Restaurant service is similar to the night-club operation in the continuous hours of service demanded of the equipment, and in the general type of personnel handling the system.

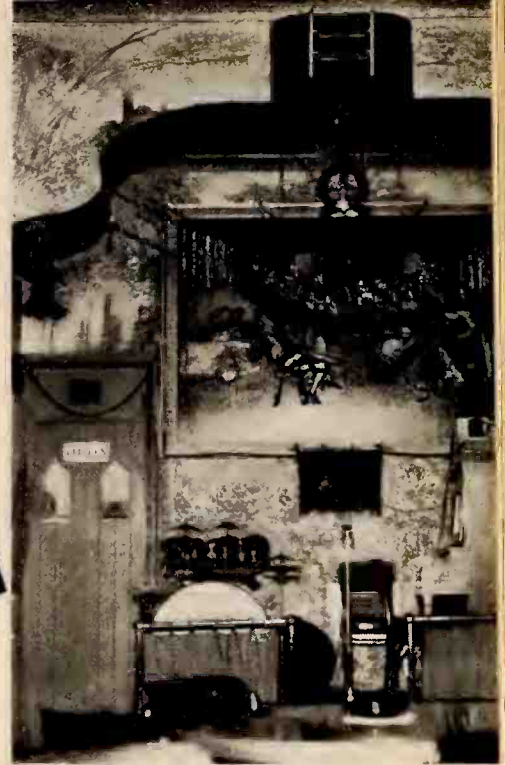
Lodge clubs are less strenuous on the equipment since they usually have

Wall serves as flat-baffle for speakers used in this lodge-club dining room. Velocity mikes used in band-shell on left and speakers' table on right.





Concealed horn-type speakers direct sound over definite area in long, narrow rooms. Amplifier installed near stage for convenience.



Very small night-club sound-served with single infinite-baffle speaker. Vanes direct sound over velocity mike.

a handy-man or electrician who takes care of the PA system.

The types of equipment that are needed for night-clubs, restaurants, lodge halls, and skating rinks, are all similar and vary only in small details.

BASIC EQUIPMENT NEEDED

For the average night club, the following equipment is essential.

1. Amplifier of proper power rating. (See chart on page 36 of *RADIO TODAY* for August 1939.) The amplifier should have at least a 4-channel input.
2. A sufficient number of speakers to handle the amplifier power, and to distribute the sound uniformly.
3. One non-directional mike for orchestral pickup. The frequency response of this microphone should be broad and as "flat" as possible.
4. One directional mike of good quality for pickup of singers and

general vocal sounds. The very high and very low frequency response of this mike is not particularly important since voices do not extend into those regions.

5. One contact mike for pickup on guitars, and other solo instruments.

Additional equipment that will prove extremely useful and at the same time make the system more versatile, includes:

1. Lapel mikes for singers, actors, and announcers.
2. Phono turntable useful in intermissions, etc.
3. Spare mike of a universal character permitting its use as a directional or non-directional pickup.

The equipment needed by a restaurant depends upon the type of entertainment to be given. If an orchestra is used, the equipment will remain the same as the night club. Since

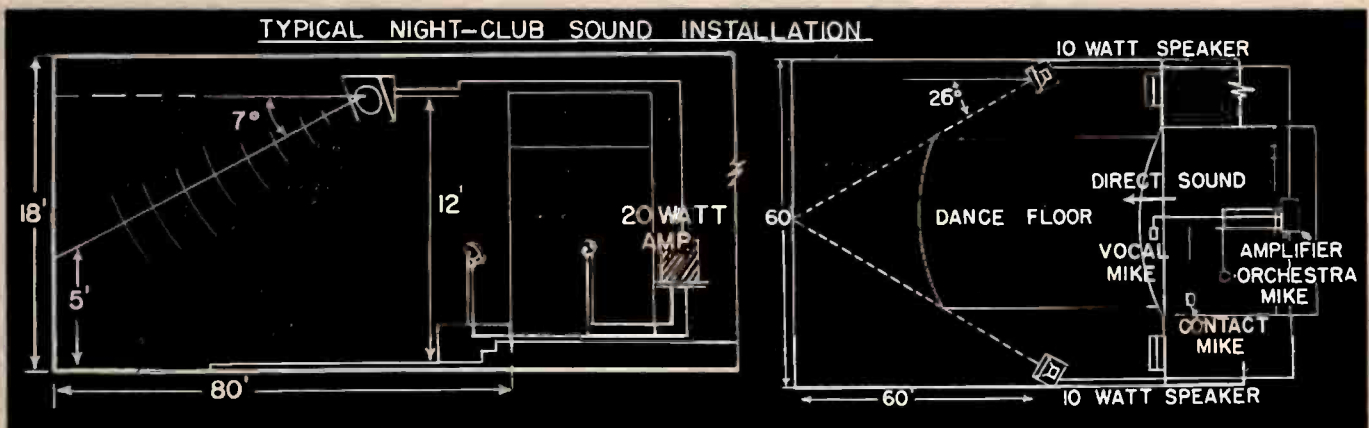
vocal entertainment is not used as much in restaurants as in night clubs, a directional mike for vocal pickup may not be necessary. The lapel and spare mike may also be eliminated.

If the musical entertainment is to be furnished by recordings, two turntables are advisable. By using two turntables and channel mixing, the musical program may be continuous, just as two projector movies are continuous.

Lodge clubs will need the same equipment listed for the night club. The phono turntable is most useful to this type of installation. Sound effects for stage productions and initiations are big selling points for PA systems in this type of service.

Skating rinks will require the amplifier, speakers, and turntable. A good microphone for announcements is also required.

(Continued on page 50)



Good sound coverage is product of careful planning. Typical layout with box-baffled speakers focused on point five-feet above center of rear wall. Keeping sound from reflecting off dance floor reduces possibility of feedback. Three high-gain input channels necessary for ample pick-up on band-shell.

VOLTAGE AND POWER LOSS IN MIS-MATCHED IMPEDANCES

EXAMPLE:

30db (6 WATTS) LEVEL IN 15Ω
LINE TO 8Ω SPEAKER

$$\frac{Z(\text{LOAD})}{Z(\text{OUTPUT})} = \frac{8}{15} = .534$$

FROM CURVE - LOSS = 0.4 db
POWER OUTPUT = 29.6db
OR 5.46 WATTS

**RADIO
TODAY**

POWER LOSS - db

VOLTAGE LOSS - db

MATCHED IMPEDANCE

FOR SIMILAR
IMPEDANCES ONLY

.4db

RATIO OF Z (LOAD) TO Z (OUTPUT)

LOSS IN DECIBELS

Voltage and Power Loss in Mis-Matched Impedances

Probably no subject in radio has been more discussed than matched or mis-matched impedances. The sound man has been told that it is a cardinal sin to have the speakers of one impedance and the line feeding them of another value.

The full page graph in this issue shows just what effect various ratios of load to output impedance have on the power transferred and the voltage appearing across the load impedance.

Since power can only be dissipated in a circuit containing resistance, the impedances to be matched must be similar in character to comply with this graph. By similar, it is meant that the impedances must contain the same ratios or reactance to resistance. The similar impedances must further be qualified by having the reactance of both either capacitive or inductive. While this covers the technical aspect of the graph, it is not a problem for the sound man to worry about. The majority of impedances used by the sound man are nearly pure resistances and will therefore apply.

DIVIDING AMPLIFIER OUTPUT

The advantage of using this graph lies in the dividing of audio power among several speakers. The total output of an amplifier may be divided into any number of unequal parts by selecting the proper ratio of speaker to line impedance.

For example, if it is desired to connect a 6-watt speaker to an amplifier delivering 40 watts into a line, the 6-watt speaker may be made to take its load and no more by a correct ratio of impedances. Thirty watts corresponds to a power ratio of $10 \text{ Log } \frac{30}{.006}$ or 37 db, and 6 watts corresponds to 30 db. The loss in power will be 7 db. Using the graph, it is seen that an impedance ratio of 16.5 will give the loss of 7 db. The speaker impedance should be 16.5 times the line impedance.

The curve for voltage loss is useful in matching microphones to amplifier inputs. It is apparent that the larger the load impedance is with respect to the microphone impedance, the greater will be the voltage across the load. Since a mike does not furnish power but merely swings the grid voltage, it is important to have a high load to output impedance ratio.

For quick estimation remember that a loss of 3 db in power is a loss of 50 per cent, and a loss of 6 db in voltage is also a loss of 50 per cent.

Other uses for the chart will present themselves as it is used.

New Uses for Chatabox Communicators

By including a station-selector switch on the Crosley "chatabox" inter-communicators, the units are now universal in application as a wireless or wired unit. Each unit is a master station with a possible selection of 15 other stations. As a wired system, a single insulated lead is all that is required from one station to another.

Individual gain control is possible with these units acting as master stations on the wired system.

A brand new use for these communicators is a department store or factory signal call system. A distinctive oscillating tone may be used, when the gain controls are advanced to maximum position, to signal departments or persons in a manner similar to the bell systems now used. Being wireless in operation, the system fits well into old buildings not wired for such service.

The improvements in the "chatabox" have been made by the sole distributors, Amplifiers Distributors Corp., Chrysler Bldg., New York, N. Y.

Designing Degenerative Amplifiers

The effect on gain of an inverse-feedback amplifier may now be quickly calculated with the aid of the graph prepared by the Hygrade Sylvania Corp.

The chart is plotted for normal amplifier gain vs. degenerated amplifier gain for different ratios of feedback voltage varying from 0.02 to 0.95. Included with explanatory text, this material should be useful to the sound man in designing or revising amplifiers to give the higher quality possible with inverse-feedback.

SOUND BUYERS—

STOP LOOK AND LISTEN



and wonder at the marvelous convenience of the full length microphone stand, made in three sections to pack neatly under the false bottom in Webster-Chicago portable sound systems. Imagine the sales appeal you've got in that point alone, for band leaders, funeral directors, and every other user of portable systems!



at the astonishing flexibility of the new Webster-Chicago AMPLICALL intercommunicating and paging systems. Master stations may call any others up to 40, by the touch of a button; even remote stations can call any of THREE masters. Every industrial plant striving for speedier production is an AMPLICALL prospect!



to the big news in Mobile Sound—the Webster-Chicago Master Systems. From any position in the audience you can mix two microphone inputs, and control tone. Turning off a remote microphone automatically shuts off plate supply, to save battery current. They're ideal for rentals!

WEBSTER-CHICAGO

The Sound of Tomorrow



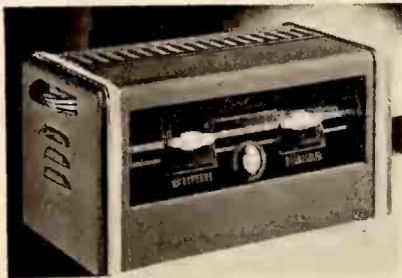
The Webster Company, Sec. 0-9
5622 Bloomingdale Ave., Chicago

Send the new No. 139 Sound Catalog

If you haven't seen the new, complete "Sound of Tomorrow" Catalog No. 139, send in the coupon now. The Webster Company, 5622 Bloomingdale Ave., Chicago.

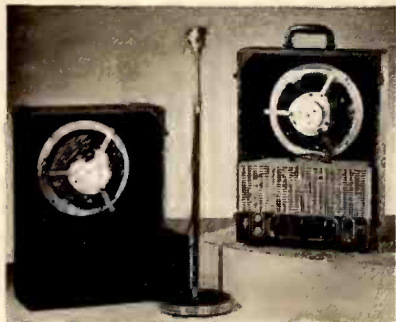
New Sound Products

New Equipment for Every Sound Job



Erwood amplifier

★ Model 2418-A is an 18-watt amplifier adapted for general PA work. Input channels for two mikes or one mike and one phono. Circuit with 7 tubes is housed in steel case. Flame resisting wiring used. Erwood Sound Equipment Co., 224 W. Huron St., Chicago.—RADIO TODAY.



Webster Electric PA system

★ Versatile sound system with removable amplifier for permanent location. Speakers and amplifier are entirely separate independent units for use alone or together. Power output is 13 watts, and features include AVC, dual tone control, power gain of 129 DB for mikes and 79 DB for phono. Frequency range is within 3 DB from 45 to 10,000 cps. Webster Electric Co., Racine, Wis.—RADIO TODAY.



Astatic crystal pickup

★ Tru-tangent phono-pickup featuring spring-axle cushioning uses type B ebonite coated crystal. Single hole mounting and die-cast arm. Frequency response may be varied with E4P tone equalized. List price, \$10. Model AB-8. Astatic Microphone Lab., Inc., 830 Market St., Youngstown, Ohio.—RADIO TODAY.

Fairchild portable recorder

★ Dynamically balanced, 16 lb. turntable is gear driven from a synchronous motor for 78 or 33 1/3 RPM. Crystal cutter head and crystal pickup are operated by a high fidelity amplifier. Adjustable pitch of 98 to 161 lines per inch. Model F-26-2 Fairchild Aerial Camera Corp., 88-06 Van Wyck Blvd., Jamaica, L. I., N. Y.—RADIO TODAY.



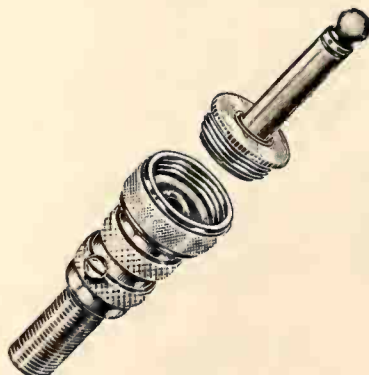
Universal recorder

★ Direct vertical shaft driven turntable operated from synchronous motor. High quality cutting head driven by 5-watt 120 db gain amplifier. Cuts up to 12-inch records at 78 RPM and permits monitoring of recording by headphones. Crystal or dynamic mike. Uni-Cord No. 5160. Universal Microphone Co., Inglewood, Calif.—RADIO TODAY.



Transducer mike

★ High-sensitivity dynamic microphone with directional pickup characteristic has alnico magnet, black bakelite case, chromium-plated swivel yoke, and 25-foot cable. Average output, -49 db. May be used as speaker. Available in 200, 50M ohm impedances and 50 and 500M ohms on special order. Transducer Corp., 42 W. 48th St., New York, N. Y.—RADIO TODAY.



Atlas mike plug-connector

★ New microphone cable terminal is a combination plug or screw-cap connector. Removable male plug is of riveted construction and cable connection is made to screw-cap unit. Adjustable grip spring extension makes positive ground connection to cable shield. Amplifier input terminals are of the shorting and open circuit types. Atlas Sound Corp., 1447-51 39th St., Brooklyn, N. Y.—RADIO TODAY.



Operadio portable PA system

★ Model 425-GG is a 30-watt portable system with mike floor stand, two 12-inch pm speakers, and infinite baffle cases. Controls are set in illuminated recess. Mike and cable supplied. Floor stand carried inside case. Operadio Mfg. Co., St. Charles, Ill.—RADIO TODAY.



Thordarson amplifier

★ Featuring handsome steel cabinet, this 14-watt amplifier has multiple stage inverse feedback and low frequency booster. Linear response to 15,000 cps. High-fidelity amplifier lists at \$57.50. Thordarson Electric Co., 500 W. Huron St., Chicago, Ill.—RADIO TODAY.

Burlingame Appointed by IRC

Bruce Burlingame, well-known manufacturers' representative with headquarters at 69 Murray Street, New York City, has been appointed by the International Resistance Company, 401 North Broad Street, Philadelphia, to handle IRC fixed and variable resistance products to the jobber and industrial trade. His territory will comprise parts of Eastern Pennsylvania, Maryland, Delaware, New Jersey and the District of Columbia.

Meissner Develops New Vibrator

G. V. Rockey, v.p. and general sales manager, Meissner Mfg. Co., has announced that his company has developed "an entirely new vibrator which life tests prove to be of exceptional value." Shipments on the new product were started September 8th and preliminary reports from the field are most satisfactory, said Rockey.

Meissner statements reveal that at the end of the fiscal year, September 30, their jobbing division showed an increase of 72 per cent over a similar period a year ago and the month of September was the largest in the history of the jobber division.

GE. to Manufacture Radio Equipment and Accessories

With the revision of its radio patent agreement, General Electric has announced that it is now licensed to manufacture and sell, and will immediately offer television and frequency modulation transmitters including G-E tubes as standard equipment. Also available will be complete studio and control room equipment—lights, cameras, controls, monitors, and antennas. The license also covers transmitters and receivers for purposes other than television and frequency modulation. Transmitting tubes for replacement in G-E apparatus and for certain specialized applications are available at present, and after January 1, 1940, they will be on sale for nearly every purpose.

New Radio Parts Supply in Roanoke

The H. C. Baker Sales Co., 19 Franklin, Roanoke, has recently opened a wholesale radio parts department, with supplies for radio dealers, servicemen, experimenters, and amateurs in southwest Virginia. A complete stock of replacement parts is carried for all makes of radio receivers, radio transmitting equipment and sound systems. The officers of the new company are: Alfred B. Geer, president, and James H. Davie, secretary-treasurer.

* * *

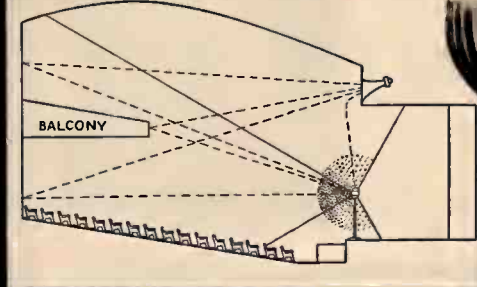
Booklet of amplifiers and transmitters may be obtained from Stancor jobbers.



Engineering board of Transformer Corp. of America makes plans at the October meeting. L. to r., standing: W. W. Whiteside, G. J. Sandberg, Julien Berger, A. G. Merlin, J. R. Schoenbaum, L. W. Marko. L. to r., seated: H. W. Wells, Roy Neusch, H. W. Paro, H. L. Shortt, F. X. Dostal, N. F. Manicardi, Herman Tauber.

How to stop feedback in P. A. set-ups!

A Cardioid Microphone installation showing minimum feedback. Dotted area indicates dead zone.



639A MIKE SOLVES YOUR TOUGHEST PROBLEMS!

With the 3-in-1 Cardioid Directional Mike you have 'pick-up' control formerly impossible.

It provides new flexibility—gives you a ribbon mike or a dynamic mike or *both*, matched and equal-

ized to offer a new high in clarity and fidelity. It has a large dead zone, minimizing feedback. It's ideal for *any* and *all* Public Address set-ups, as well as for broadcasting. Get full details. Send the coupon today.

Western Electric
CARDIOID
DIRECTIONAL MIKE

GRAYBAR ELECTRIC CO., Graybar Bldg., New York.
Please send booklet describing Western Electric's New 639A Mike. R1-10-39

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Specially Designed For High Grade INSIDE Sound Work



A R Speaker Enclosure

You can not use a speaker with a very large flat baffle for the average indoor installation because of its excessive size. The A R Speaker Enclosure gives you the high grade sound of a speaker using a large flat baffle, but has been made compact and attractive for inside sound work.

The beautiful two-tone grey finish blends with any decorative scheme.

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Export Division: 145 W. 45th St., New York



All Operadio Amplifiers and Inter-communicating Systems are Licensed by Electrical Research Products, Inc., under U. S. patents of American Telephone and Telegraph Company and Western Electric Company, Incorporated.

More Sound Products



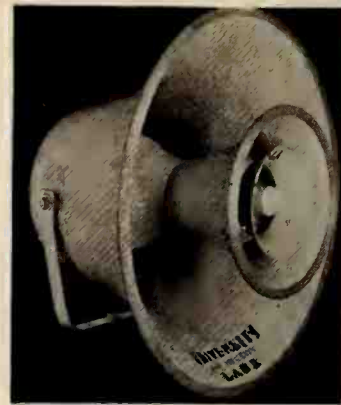
Amperite streamline mike

★ New line of streamline microphones feature station-type plug designed to eliminate breaking of the cable at the plug. Increased damping mounting reduces shock noise. Amperite Co., 561 Broadway, N. Y.—RADIO TODAY.



Wilcox-Gay recorders

★ Model A-71 illustrated comes in suede covered portable case. Controls mounted on panel at front of case with amplifier and speaker immediately below. Automatic cutter head and crystal pickup. List price \$67.50. Model A-70 is a combination recorder, phono-radio mounted in console cabinet. List, \$129.95. Wilcox-Gay Corp., Charlotte, Mich.—RADIO TODAY.



University dual speaker

★ Model WCC hf and lf speaker uses separate driving units and electrical filter networks. Non-resonant rubber tired rims. 60 to 10,000 cycle range over wide angle. Highs through cellular bell and lows through trumpet. University Labs., 195 Chrystie St., New York, N. Y.—RADIO TODAY.



Ward sound system

★ Special microphone, amplifier and speaker mounted in a single case make compact unit for public speakers. Illuminated manuscript stand built into top of case. Crystal mike. Amplifier provides 15 to 18 watts power. Eight inch P.M. speaker. Phono input jacks and extra speaker sockets provided. Montgomery Ward Co., W. Chicago and N. Larr Sts., Chicago.—RADIO TODAY.



RCA auto-record changer

★ Automatic record changing mechanism has top loading crystal pickup, and plays 7 twelve-inch records or 8 ten-inch records. Plays any size records manually. May be attached to any model radio-phonograph with sufficiently large cabinet. Motorboard dimensions, 14 3/4 x 11 1/2. No. 9865 lists \$44.95. RCA Mfg. Co., Camden, N. J.—RADIO TODAY.

WHEN QUALITY COUNTS

THE CARRIER DYNAMIC MODEL 702-D

For Broadcasting, Recording, Reinforcing

Here is an instrument of striking professional appearance and outstanding performance. It features the new "Acoustic Equalizer"—an exclusive Carrier development—which makes possible a response curve whose linearity surpasses that of other types. Other features include: Wide range performance, Hepco locking type cable connector, magnetic shielding, sealed construction.

Response $\pm 2\frac{1}{2}$ db. 30 to 10,000 cycles.
Output level—60 db.

List Price: 30 ohms. \$60.00; 200 to 500 ohms. \$68.50

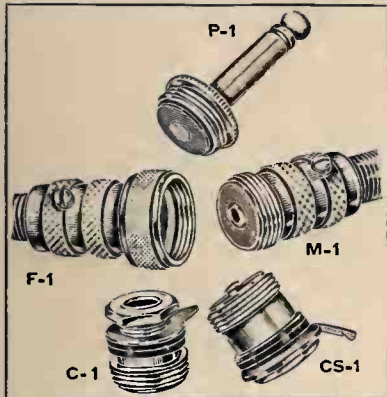
Free catalog 10B fully describes this and other Carrier microphones

CARRIER MICROPHONE CO. 439 So. La Brea Ave.
INGLEWOOD, CAL.

15 EAST 26th STREET, NEW YORK, N. Y.



• **Leading The Parade of New Sound Products**



Atlas "Hold-Tite" Connectors

They're the handiest . . . speediest . . . easiest to use shielded connectors yet designed for the man who is selling sound. The new Atlas line features the multi-purpose "Duo-Plug" Connector (P-1 and F-1) which is the ONLY telephone type plug offering a reliable means of attaching the shield of single conductor cable. The "Duo-Plug" permits connection to amplifier chassis screw connectors . . . male line connectors . . . and as a complete unit for jack type inputs. Why not make better sound connections by using Atlas "Hold-Tite" Connectors?

• **Send for FREE Fall Catalog**

Jobbers . . . P. A. Men! Write for your copy of the new Atlas Fall Catalog describing "Hold-Tite" Connectors and a complete line of sound equipment and accessories.

ATLAS SOUND CORPORATION

1453-A 39th Street Brooklyn, N. Y.

JIM QUAM Says



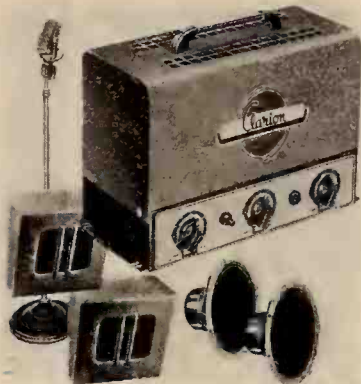
Well, they are at it again! It seems strange to me that the European nationalities cannot live in the same harmony that prevails among them in this country, where Briton and German, Frenchman and Russian, Christian and Jew can rub elbows daily without conflict. But the fact remains that Europe—it again at war and—make no mistake—it will be a real war, one that will affect us in many ways.

The radio manufacturer is facing new problems with no precedent for guidance. No doubt, the demand for radio receivers will be increased, but materials and labor will present greater and greater problems. Now is the time to analyze sources of parts supply, with reliability the first requirement.

The far-sighted radio executive can avoid lots of future trouble by clear thinking at this time.

QUAM-NICHOLS CO.

33rd Place & Cottage Grove CHICAGO 1674 Broadway NEW YORK



Clarion sound system

★ Complete system rated at 16 watts uses beam power tubes in push-pull for total gain of 113 db in mike channel. Frequency response from 40 to 9500 cycles and output impedances from 2 to 500 ohms. Two 10-inch PM speakers and a choice of one of five modern mikes are included with the floor stand, and wall baffles. Model C-418. Transformer Corp. of America, 69 Wooster St., New York, N. Y.—RADIO TODAY.



Shure uniphase mike

★ Uni-directional crystal or dynamic microphones with cardioid pickup pattern are useful in sound installations troubled with feedback. Available in Model 730A uniphase crystal type and series 55 undyne, dynamic type. Shure Bros., 225 W. Huron St., Chicago.—RADIO TODAY.



Webster Electric crystal pickup

★ X-79A series crystal phonograph pickups have frequency response from 50 to 8500 cps and operate with 2.5 ounce needle pressure. Arm assembly is rubber cushioned to prevent "mechanical reproduction." Single hole mounting. Webster Electric Co., Racine, Wis.—RADIO TODAY.

Smooth Performance

for P.A. and Recording



DYNAMIC MICROPHONE

Modern in its functional design, tiltable for directional or non-directional pick-up, this new "630" is suitable for all modern amplifiers . . . readily adaptable to high fidelity music and speech pick-up.

Rugged in construction . . . made entirely of metal and bakelite, it is impervious to heat, temperature changes, rough handling and salt air . . . a "natural" for service in tropical climates.

★ **FREQUENCY RESPONSE:** 40 - 9000 c.p.s. with rising characteristic on upper end of curve.

★ **OUTPUT:** —56 db. (open line). Standard output impedances include Hi-Z, direct-to-grid.

★ **VOICE COIL:** Hand drawn aluminum wire for lightness, insulated with Polystyrene.

★ **MAGNETIC CIRCUIT:** Large alnico magnet with Armco magnetic iron pole pieces.

★ **DIAPHRAGM:** Heat treated Durev.

★ **TRANSFORMER:** Built-in in all models except 50 ohm. Core material has extremely high permeability.

Available in both chromium and light gunmetal finishes. Full equipment includes a three contact locking connector, 20 ft. low capacity cable, on-off switch and tilting stand mounting.

630-GM (gunmetal) list price \$25.00
630-C (chromium) list price 27.50

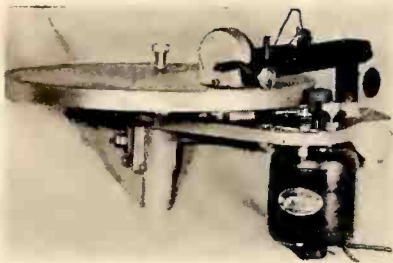
See this new "630" at your local radio parts distributor. Write for complete details.

ELECTRO-VOICE MFG. CO., Inc.

1239 SOUTH BEND AVE. SOUTH BEND, INDIANA

SUN-GAZER

Convert Your Public Address Amplifier Into a Recorder and Get Into a Sure-Fire New Field



FREE from hum, vibration and bumps, this basic recording mechanism is the ideal central unit for a high quality professional-type recording system. The quality of the recording depends only on the quality of the amplifier and disc used with it.

A heavy-duty, constant speed General Electric motor mounted on a solid vibration-proof aluminum casting is used to rim-drive the turntable. Machined from a one-piece aluminum casting, the turntable is absolutely flat and wobble-free. The recording arm is instantly adjustable for use with acetate, aluminum or pre-grooved discs. Impedance of the cutter is 15 ohms.

The complete unit can be mounted on a mounting board 15 x 15 x 5/16". Full instructions and templates are furnished with each unit. DEALER NET PRICE. **\$56.75**

We carry a complete line of recording cutting heads, recording amplifiers, crystal pickups, turntables, etc.

Write or consult our Mr. Austin on any of your recording problems.

SPEAK-O-PHONE
RECORDING & EQUIPMENT CO.
19 WEST 60th STREET, NEW YORK, N. Y.

SOUND IN NIGHT CLUBS

(Continued from page 43)

Amplifiers for night clubs, restaurants, and lodge clubs should have good frequency response from approximately 50 cycles to 10,000 cycles. Bass and treble "boost" controls are handy and will find a lot of use. In skating rink service, the wide range of frequencies is not quite as important, but the amplifier should be able to cover the range of the usual record, 100 to 8,000 cycles.

Four channels are necessary in the amplifiers used at night clubs, lodge clubs, and restaurants. Two channels are usually sufficient for the skating rink amplifier; one for a mike and the phono into the other. It is a good idea to count on future expansion of the system and allow an extra channel. Pre-amplifiers may always be added, however, with the additional mixing channels.

Speakers for restaurants, night clubs and lodge halls should not be objectionable from a decorative standpoint. Flat and box baffled speakers blend in with artistic surroundings most easily.

The choice between electrodynamic and permanent magnetic units is a matter of personal preference. The better grades of both types will give excellent results. Where the speakers are located at some distance from the amplifier, the permanent magnetic type may be more desirable because of the simplified wiring.

USE LARGE SPEAKERS

The sum of the speaker power ratings should total to 1.5 or 2 times the average power to be used in the installation. By using speakers of larger power capacity, the quality of reproduction is better since the speaker is not overloaded on high-volume levels.

The subject of what type of microphone to use is more detailed than this article permits. All of the better grades of mikes are quite applicable to this type of installation. Certain type of microphones are more rugged mechanically, and these should be used where rough service is likely.

Turntables vary a good deal in quality. For continuous use, as in restaurants, a heavy, well-balanced table either rim or gear driven in will give the most trouble-free service. The most common speed is, of course, 78 RPM; 33 1/3 RPM records are rarely used. Check to see if a dual speed table will be needed.

Exposed connecting cables for mikes, speakers, pre-amps, and turntables should have a good quality connector. A locking variety is to be preferred, since it gives better service and prevents emergency breakdown from cables being pulled apart, or disconnected from the units.

FLOOR REFLECTS SOUND

Sound installations in night clubs require careful consideration because of the large area of hard finished dance floor.

If the speakers are mounted above the dance floor and the sound is directed down by baffles, reflection of the

sound will occur, and feed back, or "dead" areas will result.

In the diagram of a typical night club, the speakers are mounted on either side of the dance floor and directed down at a small angle of 7 degrees. By keeping the angle between the horizontal and the axis of the speaker small, direct sound reflection is eliminated. To make this angle correct, 10 degrees or so, the speakers may have to be positioned quite near the orchestra stand, for short, high-ceiling rooms. Where it is necessary to mount speakers near the mikes, a deflecting baffle may be attached to the sides of the speaker baffles nearest the microphone. Horn type baffles give less trouble from feed back when close to a mike because of their directive effect.

For the best sound coverage, the speakers should be "focused" on a point in the center of the rear wall and about "ear high."

In this typical layout, the normal audio power used will be about 10 watts. The speakers, and amplifier are therefore operating at half-rated capacity for best quality and ample reserve.

HANDY LAYOUT CLICKS

Looking at the job from the technical, artistic, and operating standpoints is necessary for a well balanced, and satisfactory system.

When installing the turntables and amplifier for a restaurant job, consider the set-up from the operating standpoint. Since records are to be "faded" in from one table to another, the mixer controls on the amplifier should be convenient to anyone running the tables.

In the small night-club illustrated, a single 12-inch dynamic speaker is used. This speaker is housed in an infinite baffle chamber, and good sound coverage is obtained with deflecting vanes. Feed-back does not occur because the "beam" of sound is directed beyond the field of pickup for the mike.

A 15-watt, 2-channel amplifier is used with inputs from a ribbon mike and a contact mike.

The speaker and infinite baffle in the night club layout were supplied by Atlas Sound Corp., Brooklyn, New York. The other installations pictured here were made by Commercial Radio and Sound Corp., New York, N. Y.

SELLING SOUND

(Continued from page 40)

Sound trucks are very versatile and are profit makers for the owners. Political campaigns, police safety campaigns, motion picture, and merchandise advertising keep P.A. trucks busy.

The neat job pictured is owned by John A. Barnett, Niagara Sound Systems, Niagara Falls, Ont. A 40-watt Operadio amplifier drives the two University speakers mounted on the roof. The speakers are mounted in such a manner that they may be "aimed" in any direction. A 300-watt AC MG set is used in a sound-proof compartment to supply the power.

Sound specialists are making money in P. A. with LAFAYETTE!



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Tear out coupon and mail for FREE catalog. See the world's most complete line of sound systems. Compare Lafayette feature for feature, dollar for dollar with any other P.A. Then, go to town with Lafayette—the money-making line in the low price field.

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BOSTON, MASS. • BRONX, N. Y. • NEWARK, N. J. • JAMAICA, L. I.

Rush FREE 1940 Radio Catalog No. 78.

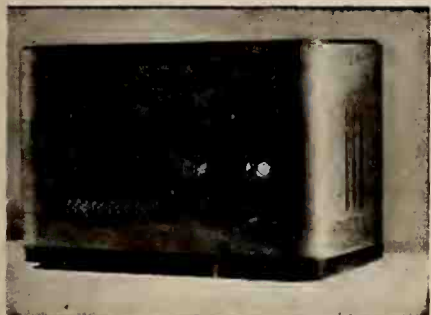
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**BEST BUY in Wireless
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\$24.50 per pair, consisting of
TWO COMPLETE
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Complete two-way wireless loud speaking system. Perfect performance. Plug into any 110 volt socket, AC or DC. Equipped with CALL-LISTEN-TALK switch and volume control. Write for information or catalogue.

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DEPT. R. T.; CHRYSLER BLDG., NEW YORK

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UNIVERSITY "NON RESONANT" LOUDSPEAKERS

will help you

Round out your sound picture



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Exclusive with University

But don't forget

Only University has ALL the following features:

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- Efficient enough to cut amplifier cost in half
- 25 watts power rating cuts down number of speakers
- High acoustic output overcomes worst background noise
- Totally waterproof under all climatic conditions
- Uniform frequency response eliminates "Microphonics"
- Unbreakable diaphragm increases life of installation
- Razor sharp clarity on voice reproduction

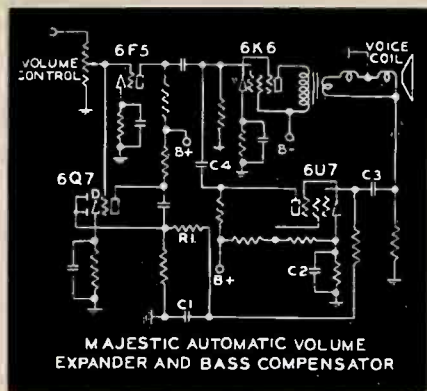
UNIVERSITY LABORATORIES

195 CHRYSTIE STREET, NEW YORK CITY

**Majestic Volume Expander
and Bass Compensator**

The circuit diagram shown is the new expander-compensator invented by C. J. Hirsch, Chief Engineer for Majestic Radio and Television Corp. The circuit is being incorporated in the 1940 Majestic radios.

Automatic volume expansion is obtained by controlled degeneration through the 6U7 tube. A portion of the voltage appearing across the speaker voice coil is fed to the grid of the 6U7 and the bias and gain of this tube is controlled by the rectified signal voltage furnished by the 6Q7. When the input audio signal across the volume control is small, the bias on the 6U7 is small, the amplification of this tube is high and degeneration re-



duces the speaker output. Small audio signals are therefore reduced to a greater extent than large signals. C₁, C₂ and C₃ regulate the bass response of the amplifier. Frequencies below the resonant period of the speaker are amplified more at low levels than at high volume giving bass compensation.

★ ★ ★

**German Electrical
Exports Shown**

A detailed tabulation of exports of electrical equipment from Germany for the year 1938 which were valued at about \$134,395,000 has just been prepared and made available by John H. Payne, chief, electrical equipment division, Department of Commerce. Two tables are included, one showing total German electrical equipment exports to all countries of the world and the second showing a detailed breakdown by commodities and countries.

The information is designed to inform American manufacturers and exporters of electrical equipment of those countries which may seek new sources of supply should the present European conflict continue to restrict exports from Germany.

★ ★ ★

New recording products are illustrated and described in catalog No. 7-B. Mike, amplifier, motor, remote speaker, and crystal play-back arm for use with the basic Speak-O-Phone recorder mechanism. Speak-O-Phone, 23 W. 60th St., New York, N. Y.

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as a member of C.I.S.E., you enjoy factory purchasing power; exclusive territory; free P.A. engineering and consultation service; prepared national advertising and local sales promotion; furnished leads—a complete merchandising set-up, making the sale of "Sound" practically a profession, and you the authorized C.I.S.E. representative in your area.

What to do

Mail the coupon today. It is your application for membership in the C.I.S.E. It will bring you full details of this sensational BIG profit-opportunity that costs you nothing. Does it work? Last year C.I.S.E. members increased Sound sales 500 per cent! Act at once—remember, only one C.I.S.E. representative to a territory. Send this coupon today!

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SELLING SOZCO

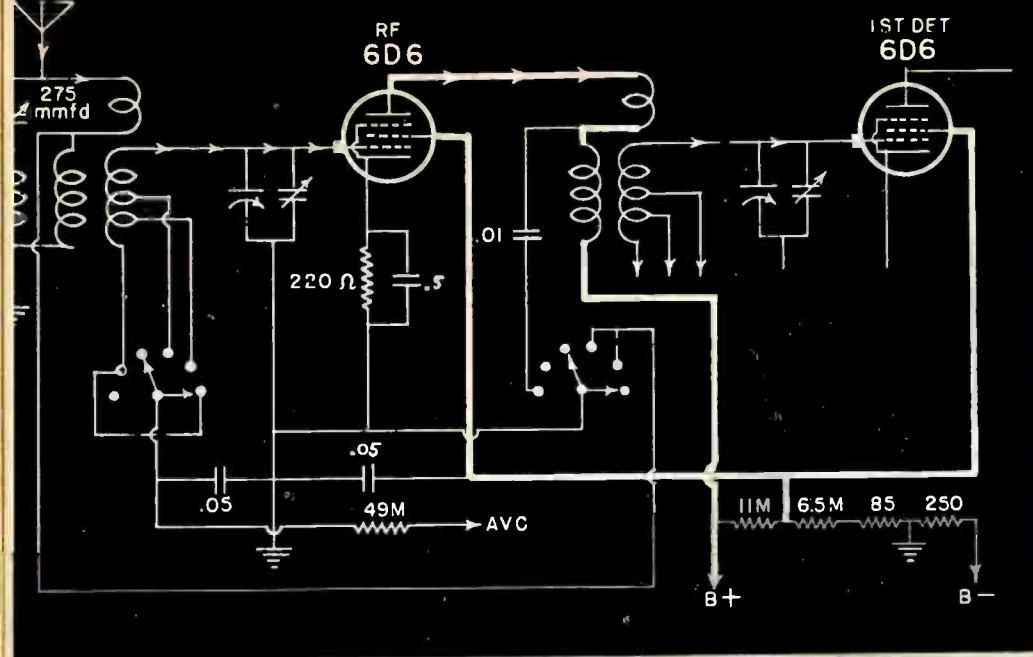


Fig. 1—Typical tuned RF stage as used in Zenith Model 825. Common screen grid voltage supply obtained from divider.

Servicing R.F. Stages

Common sources of trouble. Antenna coupling systems in the new models.

The amount of RF gain that a receiver can offer to the minute signals picked up by the antenna, largely determines the efficiency of reception. The RF stage improves the selectivity of any receiver and serves as the most efficient protection against "image" reception in superheterodynes. As explained in "Image Interference in Superhets" (September, RADIO TODAY), the RF stage(s) keeps unwanted signals from beating with the local set-oscillator by attenuating, or reducing, the strength of all signals not "tuned-in" by the stage.

TEST HIGH MU TUBES DYNAMICALLY

A typical tuned RF stage is shown in Fig. 1.

The tubes used for RF amplifiers are of the high transconductance type, such as the 6D6, 6K7, 78, and 1852. Transconductance or mutual conductance is a measure of a tube's controlling ability, i.e., the ratio of a small change in plate current to the change in the grid voltage causing it; all other things remaining constant. The small changes effected in the grid voltage by the signal, therefore, create quite large variations in the plate current. The mutual-conductance of the typical RF amplifier tube is in the order of 1,000 to 1,500 micromhos and may be calculated from the plate resistance and the

amplification factor for the particular operating point for the tube;

$$g_m = \frac{\mu}{R_p}$$

Expressing this formula in words: Mutual conductance = $\frac{\text{Amplification factor}}{\text{Plate Resistance}}$

Another characteristic feature of RF amplifier tubes (the pentodes in the more recent sets) is remote cut-off. Remote cut-off refers to the amount of negative grid bias required to reduce the plate current to zero and in the case of these super-control tubes, the cut-off bias is 15 to 20 times the normal operating bias. The advantage of this remote cut-off feature is that the gain of the stage may be varied over wide limits by changing the grid bias, and that large signals will not make the grid so negative that cut-off occurs with consequent distortion. The "bend" in the characteristic curve is not serious as a factor of distortion, since the small signal voltages usually handled do not swing the grid over a very large portion of the curve.

In testing high gain tubes such as those used in RF stages, a dynamic mutual-conductance test is the most conclusive. An emission test will prove little in determining the fitness of a high gain tube for RF amplifica-

tion. A straight mutual conductance test is better than an emission test but the AC voltage impressed on the grid during a dynamic conductance test more closely simulates actual operating conditions.

BY-PASSES GIVE MOST TROUBLE

The most common difficulty with RF stages is by-pass condenser failure in the screen grid circuit. The effect of the shorted condenser is to kill the stage although the set may be delivering a signal at the speaker, since enough signal energy is fed through the capacity of the tube to the next stage to operate the set. Where several tubes get their screen grid voltage supply from a common divider network as shown in the Fig. 1, by-pass condenser failure will reduce all screen voltages to zero and at the same time lowers all other plate and screen voltages, because of the greater current drain through the choke, speaker field, series dropping resistor, etc. Shorting of the cathode by-pass condenser will increase the volume of the signal, but the distortion will be very great. The reason being that the pentode tube must be operated at a certain minimum negative bias, and shorting the bias resistor out puts the grid at zero potential (in non-AVC sets).

In many of the older sets, the volume

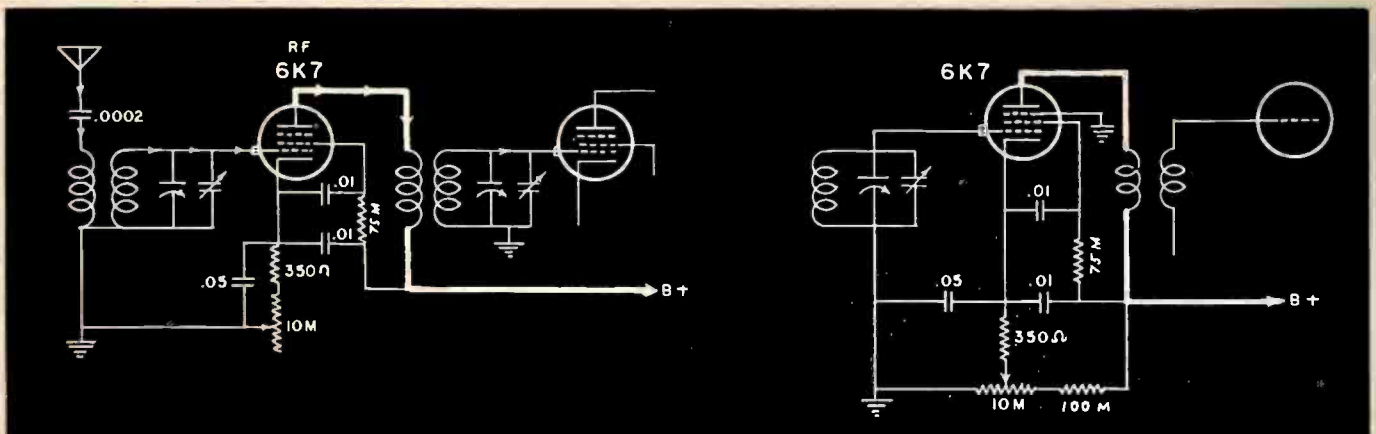


Fig. 2—Basic types of RF control circuits used for control of volume or sensitivity. Left diagram shows the series bias control. Plate current through variable resistor develops the voltage to make cathode positive. Right circuit shows bleeder system to apply positive voltage to cathode.

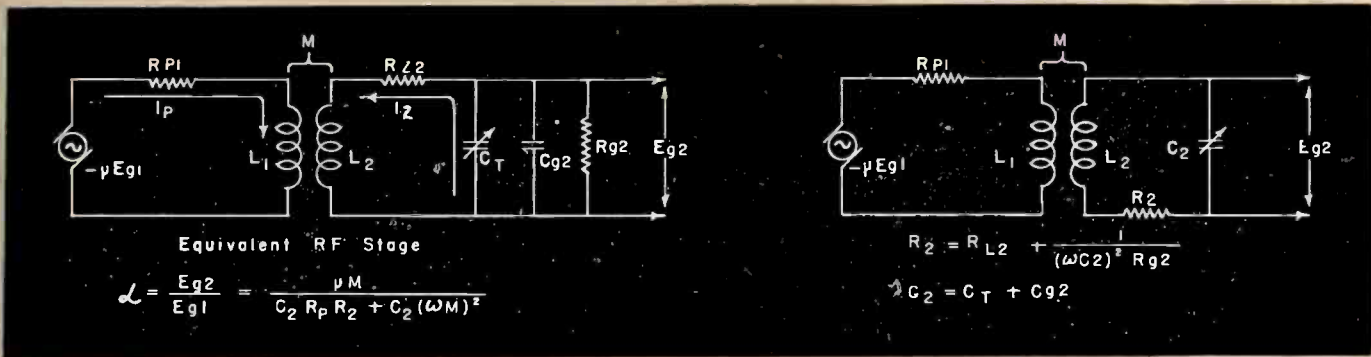


Fig. 3—Circuit of equivalent RF stage containing the active components for radio frequency currents. Alternator represents the signal voltage multiplied by the amplification factor of the tube.

control is a grid-bias control in the first RF stage, and in other models it is called a sensitivity control, when the regular volume control operates in the audio circuit. In this type of control circuit, a certain fixed resistance must be in the cathode circuit to put the proper minimum bias on the tube when the variable resistor is set as maximum volume or maximum gain. The size of this resistor may easily be determined from the minimum negative grid voltage recommended for the tube and the cathode current. For example, a 6K7 tube should not be operated as an RF amplifier with less than -3 volts on the control grid. The cathode current for this tube will be

load imposed by the test instrument.

The screen grid current for the usual RF tube is quite small, being in the order of 1.5 ma., while the drain of a 1,000-ohm per volt meter is 1 ma. at full scale deflection or 66.6 per cent of the screen current! The usual series dropping-resistor in the S-G circuit is about 100,000 ohms, and the 1 ma. drain of the 1,000-ohm per volt meter would alone cause a 100 volt drop across this resistor. With the screen current added in, the voltage that would be indicated by the meter as being present on the screen grid, would be approximately 50 volts, assuming a 250 volt supply. This reduction in voltage is enough to kill the stage.

When making measurements with a low resistance meter, use the highest range on the instrument that will give a practical deflection. The error in reading the meter at the low end of the scale will be far less than the error resulting from loading the series dropping-resistor with the meter current requirement at full scale deflection.

The voltage-divider system used in many receivers is less affected by the meter load since the current through the resistors is large in comparison to the meter current.

MEASURE GRID VOLTAGE IN CATHODE CIRCUIT

Plate voltage measurement is less subject to the errors of the screen circuit, since the plate voltage is usually obtained direct from the power supply. The DC drop across the primary of the RF coupling transformer should be in the order of a few volts. The magnitude of the plate voltage is less important in the pentode RF amplifier than is the screen voltage, since it is the screen potential that is the greatest factor in determining the mutual-conductance value.

The control-grid voltage is most accurately measured by putting the meter leads across the cathode resistor including the variable control if one is used in the circuit. This reading gives the equivalent of the negative grid voltage since the cathode is equally positive with respect to their common circuit; the chassis of the set in most cases. If it is attempted to measure the voltage at the grid of the tube with a 1,000 or 2,000 ohm per volt meter, the voltage drop in the high resistance AVC circuit, through which

the grid is grounded, will make the readings inaccurate. In sets where AVC is not used, it will, of course, be just as accurate to check the grid voltage at the grid terminal as at the cathode.

Automatic volume control voltages must be measured with extremely high resistance instruments to give any degree of accuracy. Moving coil instruments of at least 20,000 ohms per volt sensitivity or a vacuum tube voltmeter are the most suitable. The magnitude of the AVC voltage varies with the signal, making the grids more negative with respect to the cathode on the stronger signals. The AVC voltage on the grids must not be mistaken for the fixed bias necessary to keep the tubes in the proper operating range. By checking the cathode voltage as well as the grid voltage, the presence of both may be assured.

VOLTAGE GAIN CHECKS STAGE

The grid voltage (measured as its counterpart, the cathode voltage) should be checked with any variable control set in the maximum volume or maximum gain position. The voltage read will be the least negative voltage to appear on the grid and its value should be that given for the particular tube. In the case of a 6K7, this minimum grid voltage is -3 volts.

The actual gain in voltage from the grid of the RF stage to the grid of the succeeding stage is the measure of worth of the amplifier. The ratio of the AC grid voltage on the second stage to the AC grid voltage on the first stage is the voltage amplification of the combination of the tube and coupling unit.

To measure these voltages, the instrument must not draw current from the high resistance grid circuits. The

(Continued on page 56)

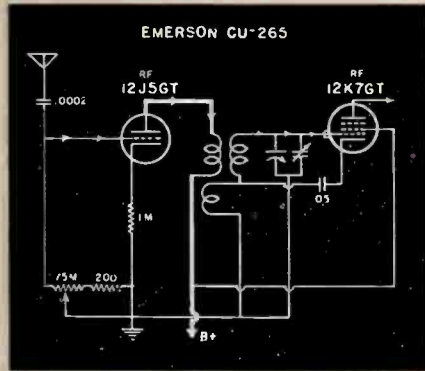


Fig. 4—Untuned RF stage isolates receiver from antenna and acts as gain control.

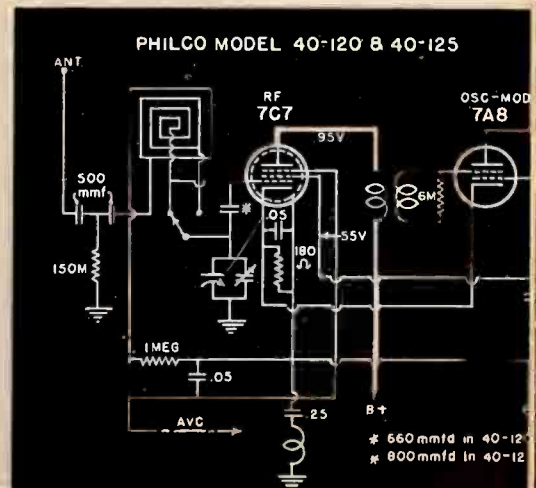
the sum of the plate and screen currents, or 8.7 ma. for 250 volt operation (100 volts on the screen). The proper bias resistor is therefore: 3 volts/0.0087 amp. or 345 ohms (350 ohms is the nearest commercial size).

METER LOADS CIRCUITS

The typical bias controlled RF stage is shown in Fig. 2. Because of the remote cut-off characteristic, a high negative bias must be applied to the grid in order to reduce the gain of the stage to zero, and this voltage is not attainable with the simple series resistance in the cathode circuit. The voltage divider circuit shown in the right hand portion of Fig. 2 is used to provide the necessary cut-off voltage. In replacing the variable control in such a circuit, check the wattage that must be handled by the resistor. Several millamps flow through the bleeder and may be too much for some of the carbon element units.

In measuring the voltages at the socket, it is important to consider the

Fig. 5—Loop antenna replaces RF coil in this set. Bias for RF and modulator tubes obtained across 180-ohm resistor.



Selling Service

Keeping the cash coming in with new ideas, methods, and progressiveness

Building Better Service

1. Give your old customers first consideration in busy seasons.
2. Tell customers and prospects about all of your services.
3. Sell trouble prevention service.
4. Keep a neat, orderly service shop.
5. Advertise wisely and consistently.

The Fall of nineteen thirty-nine will long be remembered by the servicing fraternity for more than just the events in Europe.

The overnight jump in listening hours per set owner, drove home to listeners everywhere those slightly annoying clicks, buzzes, and "what have you," that previously "weren't worth bothering about."

Everybody's desire to get the latest war news kept the greater part of the 44,000,000 radios in the United States running from early one morning till early the next, and many set-owners quickly found that their sets were not "delivering the goods."

None too good on even U. S. broadcast quality, the shortwave re-broadcasts from Europe were hopelessly lost.

Others remembered that the set they owned had something about a short-wave "band" on it. By turning the various knobs, one produced a disheartening duet between the spark plugs on the autos in the street and some foreign news-caster speaking Oxford-English that had been censored to the point of extinction.

Of course the *antenna* running

around the picture molding, or the bedspring aerial, had nothing to do with it.

SERVICEMAN SENT FOR

After trying vainly for a day or two, the family held a caucus and the idea was advanced that perhaps something was wrong with the radio! A serviceman was *called* in and he prescribed and administered the remedy—about three days later.

Being swamped with similar time-worn receivers, the average serviceman created some ill-will because he could not handle each job with his usual speed. In the hope of getting new customers, the serviceman stalled off some of the older clients. Unable to do a good, fast job for even the newcomers, his older "patients" looked elsewhere.



Distinctive cards and tags such as this one keep your name before the public. Identify your jobs with such a tag.



Neat, professional appearing service benches attract and hold customers. This one is owned by J. F. Waldron, Norwood, Mass.

The interesting fact about the repair jobs that were prompted by war, is that the service was *bought*, not sold.

The sudden rush of business came because the owner found that his set *needed* repairing. The owner was not, in most cases, informed of the advantages of keeping his set in tip-top shape by periodic inspection. He was not told that "prevention" is cheaper and more effective than the "cure" in radio as well as health. He was not told that it had been 6 or 8 months since the tubes in his set had been tested, that his 3-year old aerial was less than half as efficient as when new, that the noisy volume control he had decided to get along with was due to fall in the middle of an interesting program.

A radio service shop designed for speed and convenience. Twenty individual repair benches and small trucks for handling large consoles, speed jobs. This new shop in Madison, Wis., is owned by Harold and Milton Kidder.

RADIO TODAY



The sudden peak-influx of business should have been leveled out over the preceding "low" months by good advertising. Service, like any other commodity should be sold. But, you say, "why sell service when people are going to buy it?" The reason is simple, and sound.

ADVERTISING LEVELS-OUT PEAKS

The people who are in the market for radio repairs are non-technical and are not familiar with what is essential to the best radio reception. Their radio and antenna depreciate (physically and electrically) so uniformly that it is not noticed until good reception is greatly impaired or complete failure occurs.

A lay public must decide upon the condition of their radios and the decision must necessarily be made from things they understand; seriously impaired reception and no reception at all.

The lay public is not equipped to recognize the minor, and less noticed defects that will eventually cause a major failure.

It should be the serviceman who analyzes the condition of the set and antenna at periodic intervals. The serviceman should make a conclusive report to the owner on the exact condition of the receiving equipment. The serviceman is the logical person to pass judgment on the quality of reception. He is the one who is equipped to make accurate measurements and has the knowledge and ability to draw correct conclusions from his observations.

SELL TUNE-UPS, REPAIR, EXTRA NEEDS

These are the things a serviceman should sell:

1. Keeping a radio and accessories in perfect condition at all times; not just repairing a radio when it is totally inoperative!
2. New equipment to make the radio more valuable to its owner; such as phonograph attachments, extra speakers, headphone connections to make "after hours" listening un-objectionable, "tuning eyes," and AVC on older-sets.

New types of service must be sold to the public for they, not being technically minded, are unaware of what the serviceman can offer beside the ability to repair a set.

Use consistent advertising to bring to the listening public your "extra" services.

Direct mail is the most effective method of advertising, but to be effective it must be continuous and not sporadic. Calendars and blotters will keep your name in a home, but a leaflet, folder or card should be used regularly to describe your "noise-reducing antenna installation," the extra services mentioned before, and all the other things there are to make money with in the service game.

* * *

Robert W. Bennett.—Anyone who knows the present address of Robert W. Bennett formerly in the radio industry in St. Louis and Dayton, will confer a favor on his brother by sending it to Eil C. Bennett, 1836 Euclid Ave., Cleveland, O.

NO SERVICE CALL TOO TOUGH...

for this
**PORTABLE
"LAB."**



MODEL 1181-B
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RED • DOT
Lifetime Guarantee



Net Price
\$41.84

150-750 at 1,000 ohms per volt; DC Ma. 1.5-15-150; AC Ma. 15-150; 0-1,500 Ohms; 1.5 and 3 Megohms . . . 1151 Signal Generator (110 Kc. to 18 Mc., 400 cycle audio note from jacks) . . . and 1166-B Free Point Tester with sockets on the panel for all the latest tubes. Volt-Ohm-Milliammeter has 3" Triplett indicating instrument with RED • DOT Lifetime Guarantee.

Dealer Price\$41.84 Net.

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THE TRIPLIETT ELECTRICAL INSTRUMENT CO.

Bluffton, Ohio



Only 8 MODELS OF ALL SERVICE CALLS!
HANDLE 90%

For \$18.23 a service dealer can stock 8 models of Halldorson Transformers that will answer 90% of all radio service calls covering both power and audio requirements. And—the design of each transformer covers the requirements of all

the makes of sets for which it is intended. When the investment is so low, why not be prepared to give prompt transformer service with the outstanding Vacuum Sealed Transformer line?

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Vacuum Sealed Transformers
THE HALLDORSON COMPANY
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SET TESTERS
OSCILLOSCOPES
SIGNAL GENERATORS
VOLTMETERS
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TYPEWRITERS
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No matter what units you need to modernize your store and shop facilities, chances are you can obtain them easily and quickly merely by selling high-quality Arcturus Tubes!

The Arcturus Equipment Deal, with Lower Down Payments and Lower Tube Requirements than ever offered before, was devised by Arcturus to help you do more business at a greater profit. It enables you to offer your customers Radio's finest Tubes . . . it gives you your regular tube profit . . . and, best of all, it gives you an EXTRA PROFIT in the form of modern store and shop equipment! Tube prices remain Standard—less standard discounts

Mail the coupon today. Let us show you how you can increase your business, speed up service—make more money from now on!



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ARCTURUS RADIO TUBE CO., Newark, N. J. T-24
Without cost or obligation, send my copy of the ARCTURUS DEALER HELPS Folder and details of the ARCTURUS EQUIPMENT DEAL.

Name.....
Street.....
City.....State.....
 I am a dealer I am a serviceman. My jobber is.....

For your convenience this coupon can be pasted on a jenny postcard

Servicing RF Stages

(Continued from page 53)

device to do the job is, therefore, the vacuum tube voltmeter.

The mere presence of the signal in and beyond a given stage does not give proof that the stage is doing its job to the best of its ability.

Measure the AC grid voltage of a stage with the VTVM and then the AC voltage across the load resistance or impedance in the plate circuit of the same stage and divide the latter reading by the former. The quotient is the voltage amplification of the stage.

The voltage amplification of a tube is a function of the amplification factor of the tube, the AC plate resistance, and the load resistance or impedance in the plate circuit.

$$\alpha = \frac{\mu Z_L}{\sqrt{(R_p + R_L)^2 + (X_L)^2}}$$

In this formula for voltage gain, μ is the amplification factor of the tube, Z_L is the load impedance, R_L is the resistance portion of the load, and X_L is the inductive reactance portion of the load.

The distributed capacity in the coils of an RF transformer makes it impossible to use the theoretical value of inductance for maximum gain, since resonance would occur at a low frequency and the stage would be worthless beyond this point.

TUBE GAIN LESS THAN MU

The voltage gain, α , cannot exceed the amplification factor for the tube. The closer the voltage gain approaches the μ of the tube, the more efficient the tube is as an RF amplifier.

The total voltage gain of a stage, measured from the grid of one tube to the grid of the succeeding stage, involves the efficiency of the coupling device as well as the μ of the preceding tube. (See formula in Fig. 3). The most common coupler in RF stages is the transformer with a tuned secondary.

The voltage gain of the entire stage is a complex function of the inductance of the transformer primary and secondary, its distributed capacity, the mutual inductance between the primary and secondary, and the input impedance of the grid of the driven stage.

In the equivalent RF stage circuit of Fig. 3, the $-\mu E_g$ is the voltage appearing in the plate circuit of the first tube due to the grid voltage and amplification factor of the tube. The negative sign indicates that the amplified grid voltage has been reversed in phase. It is impossible to measure this voltage since a portion of it is lost in the internal plate resistance of the tube. R_p is the plate resistance of the first tube; L_1 is the self inductance of the primary of the transformer; R_s is the AC resistance of the secondary coil and condenser; C_t is the tuning capacity; R_{g_2} is the input resistance of the grid of the second tube; and C_{g_2} is the shunt capacity from grid to cathode in the second tube. M is the mutual inductance between the primary and secondary and it is a function of the inductance of each of the two coils, and their physical relation to each other.

This equivalent circuit shows only

the path of the AC currents. Obviously for power reasons, the AC currents must flow through blocking condensers in order to isolate DC circuits. These blocking condensers are the plate, screen, and cathode by-pass condensers in the actual circuit. Their reactance (opposition to flow of current) is negligible at radio frequencies and they do not enter into the equivalent circuit.

RF stage servicing may be simplified by first establishing the proper power relations with static voltage and current measurements and then analyzing the signal portion of the stage in an equivalent circuit. It is seen that the grid of the second tube must be operated with a negative bias to keep R_{g_2} high. At ordinary frequencies, the shunt effect of C_{g_2} is negligible. With the resistance R_{g_2} high and the reactance of C_{g_2} high, their load current drawn through R_2 will be a minimum and the maximum of voltage will be available on the grid of the tube.

LOOPS REPLACE RF COILS

The current new models are featuring simplified installation in the home through the use of loop antennas. These loops have been built into the set, and made a part of the antenna transformer by designing the coil to have the proper inductance, necessary to cover the band with the regular gang condensers.

Fig. 5 shows the new Philco model 40-120, 40-125 schematic for the RF stage. The set uses six push buttons to select five stations and switch to manual tuning. The push buttons select stations by paralleling fixed capacitors across the coils. Two-band reception is obtained with tapped coils.

The fixed grid bias for this RF stage is developed across the 180 ohm resistor which also furnishes the bias for the 7A8 oscillator-modulator. An interesting feature is the suppressor-grid connection. By keeping the suppressor-grid at the same potential as the control grid (always negative), the high ratio of screen to plate voltage may be used without difficulty from secondary emission from the plate. High RF gain is realized from this stage.

An un-tuned RF stage is shown in the right hand portion of Fig. 4. The Emerson CU-265 is a 5-tube AC/DC TRF set with the 12J5GT functioning as an un-tuned stage of RF amplification, and also serving to isolate the set from the antenna. The volume control does double duty by varying the bias on the tube, and the amount of the antenna signal to be supplied to the grid of the tube. This type of circuit is sharper in action than the simple series cathode control. A stop on the control leaves 200 ohms in addition to the 1,000-ohm fixed resistor in the cathode circuit. The small tickler coil in the tuned RF stage puts the cathode above ground for RF currents and gives a slight amount of regeneration.

Price Change in N. U. Tubes

A general revision in the net price structure of National Union radio tubes has been announced. New list prices will be issued to conform with industry standards.

Service Notes

Improving Reception with Built-in Antennas

Both loop and line antennas will usually provide excellent reception under average conditions in the home. Unfortunately, conditions in a distributor's or dealer's demonstration room are far from average, and usually are such as to provide very poor reception. Thus, receivers with built-in antennas show up to decided disadvantage. To provide better set-demonstrations in such locations, the service department of Stewart-Warner suggests the following remedies.

Practically all AC-DC sets on the market use a buffer by-pass condenser across the power line. This condenser will also by-pass any radio signal in the line, so that the line antenna of any set that may be plugged into the same supply will get no radio signal to speak of.

Loop antenna sets operate under severe handicaps in buildings of steel construction since the steel framework acts as a shield and permits very little radio signal to pass thru. To demonstrate loop antenna sets under such conditions, an outside aerial may be connected to any large metallic object in the demonstration room near the loop sets. If a more finished installation is desired, the outside aerial may be connected to a large plate of metal or a copper screen fastened underneath the table on which the loop sets rest. The outside aerial serves to bring the radio signal into the building so that the loop antenna can pick it up.

Rider Lectures in N. Y.

Speaking before a group of New York and New Jersey servicemen, John Rider discussed the business problems of the servicing field. This first lecture of Mr. Rider's was held at the Manhattan Center on September 21, and is one of a group of forty to be given in cities throughout the country by the RCA parts distributors and RCA Victor.

Auto Radio Installation Tips

The use of rubber for mounting purposes and mechanical insulation in the new cars introduces a serious electrical problem when auto radios are installed. Unbonded parts of the car pick-up and re-radiate ignition noise to the radio. A quick way of checking for this type of interference is to use a large file as a connector between the suspected part and the frame or block of the car. Once located, the fender, or other part should be securely bonded with flexible braid to the frame or motor.

Loose mounting nuts holding dash instruments in place will often cause interference when instruments are not grounded. All gauges operating from the battery should be checked for loose

parts and should be well grounded. Where grounding would cause a short circuit through the instrument, use a by-pass condenser in the order of $\frac{1}{2}$ mfd.

Bad cases of tire static have been traced to canine indiscretion and a good scrubbing of the tire is the cure.

Ghirardi to Survey Technical Books

Alfred A. Ghirardi, well-known radio writer and consultant, has been engaged by the newly-formed United Technical Publishers Company to make a detailed survey of the text books

now offered by American publishers for home study of various branches of radio, television, electricity, sound, aviation, and in fact all other technical subjects, and to select for each subject the best text-books published.

Mr. Ghirardi invites radio students, servicemen, and any others interested, to assist him in the survey by sending him lists of technical subjects in which they are in need of good instruction, and for which they would like to obtain the "best" book for home study. Requests and suggestions should be addressed to Mr. Alfred A. Ghirardi, care of United Technical Publishers Company, (Room 587) 45 Astor Place, Dept. 30, New York, N. Y.

UTAH-CARTER VITREOUS ENAMEL RESISTORS



Backed by More than 10 Years of Development Engineering and Precision Manufacturing

You get the benefit, with the Utah wire wound resistors, of more than a decade of experience in the development of resistance units—starting with the first 10 and 20-Watt types made by the Carter Radio Company and followed by years of competent engineering which has kept abreast of all industry developments.

Double protection is provided by the two, separately fired coats of porcelain enamel applied by the wet process. The hard, glassy enamel adheres permanently to the porcelain tube core, resistance wire and terminals. Dangers of corrosion from salt spray, moisture, acids and alkalis are avoided. The added strength eliminates the possibility of sharp tools piercing the coating. Utah terminals cannot tear loose, bending of soldering lugs will not break

the wire. The junction of wire and terminal is silver-soldered for perfect conductivity.

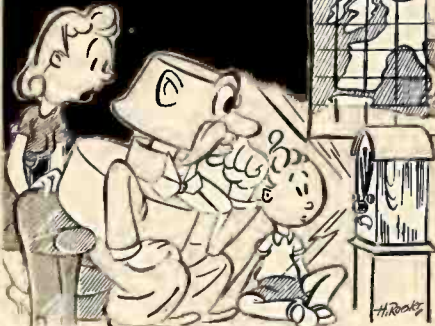
Utah-Carter Vitreous Enamel Resistors are available in a full range of sizes and types, from 5 watts to 200 watts. The adjustable types have dependable accuracy of Utah fixed resistors. In the exposed area the wire is protected and securely anchored by the enamel which lies between the turns. The cadmium-plated steel adjustable terminal can be set at any desired value along the resistor and clamped in place. The wattage which may be safely dissipated at fractional settings is proportional to the effective length of the section being used. Complete information is contained in the new 32-page Utah catalog. Write for your free copy today.

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Where permanence of temperature compensation insure and retain stability of frequency in oscillator circuits.



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In standard or midget . . . a low noise level and smooth attenuation insure reception of faint signals.



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Multi-point switching for wave change or tone control . . . with positive low resistance contact.



TOGGLE SWITCHES

In communication receivers . . . with crystal filters and wherever delicate supplemental tuning is involved.

Centralab

DIVISION OF GLOBE-UNION, INC.

Milwaukee, Wis.

RSA News

Among interesting speakers contributing to successful RSA meetings last month were: John Rider at Boston, New York, and Chicago, discussing RCA test equipment; Major Edwin Armstrong at New York City with a demonstration of frequency modulation; Robert Thompson of Meissner, at Chicago demonstrating and explaining the television kit; L. F. Worden, of G. E., in Pittsburgh discussing "Electronic Tubes in Industry"; Frank Cook, NRI, Washington, D. C., as m.c. at a "Know your own test equipment" discussion. Bruce Burlingame will speak in Newark on October 24th.

Several chapters are preparing material for the NAB-RSA "Curtain Raiser" cooperation. With the aid of Joe Marty, RSA executive secretary, a complete operating unit has been set up in Cleveland. Washington, D. C., and St. Paul, Minn., chapters are also at work on the plan.

A record of poor credit and undesirable customers will be compiled and local newspaper advertising increased by Lansing, Mich., members.

Ray Rogers has resigned from the Southern New Hampshire chapter having been transferred by his firm to Portland, Me. Walter Bennett succeeds him as secretary.

The Lehigh Valley Chapter in Allentown, Pa., and the Ohio Valley chapter have enrolled in the RSA television course.

New officers of the Jersey City chapter are: William Fuller, chairman; L. Coon, vice chairman; Frank Johnson, secretary; George Kuhn, Sr., treasurer; William Iannuzzi, sergeant-at-arms.

Soundview Marine Moves

The general offices and display rooms of the Soundview Marine Co. have been removed to the General Motors Building, 1775 Broadway, New York City. The company recently announced a new line of marine radio receivers. Models in the line include a 5 band set with separate speaker; a 7 tube, 3 band receiver with 6 inch p.m. speaker, and a battery-portable type five-tube superhet. All models are specially designed for marine use.

Bohlke to New RCA Post

W. H. Bohlke of the RCA service division has been appointed director of test equipment and service merchandising, announced L. W. Teggarden, manager of the RCA radio tube and parts division.

In his new duties Bill Bohlke will concern himself with the problems of servicemen in the field. He has had a great deal of experience as author and lecturer in the service field and has pioneered in radio and television research. During 1935 and 1936 he was in charge of all publications of the RCA service division and prepared the service lectures on antennas and receivers which were used that year in a series of meetings conducted by RCA throughout the country. More recently he has served as television engineer and editor of the text, "Practical Television by RCA."

Clough to Direct C-B Sales

Kendall Clough, chief engineer and president of the Clough-Brengle Co., is assuming personal direction of C-B instrument sales, it has been announced by the company.

Fred Wellman, active sales head during the past two years, continues as vice-president and advertising counsel.

BOOK REVIEWS

Manual of Radio Interference Elimination, Sprague Products Co., N. Adams, Mass.

One of the greatest menaces to perfect radio reception is man-made static, or interference. Motors, diathermy equipment, electrical heaters, power transformers, and a multitude of other noise-makers are all discussed in this new manual.

The subject of noise-reducing antennas, and antenna locations is reviewed with definite suggestions toward interference elimination.

Constructive ideas on locating the sources of interference and tabulation of characteristic noises simplifies the problem of tracing out noise-makers.

A group of elimination procedure charts tells and shows how to combat the noise once it is located. Wiring diagrams explain the connections of the recommended filters. Noise making equipment is classified for quick reference and sure cure. The price of this useful book is twenty-five cents.

ALL YOUR RADIO NEEDS

Here in this one big book you will find everything you need in radio including radio sets, parts and supplies . . . newest public address systems . . . latest amateur equipment . . . testers and kits . . . your nationally known favorites at lowest possible prices. Best of all, our service is better than ever. Most orders are shipped the same day they are received. Be sure to write today for your copy of this big FREE CATALOG and save money. Not only do you save money but you also save valuable time by sending in one order for your entire needs selected from this big valuable catalog of the radio industry. Join the thousands of others who now buy their entire needs from B. A.

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RCA-Farnsworth Conclude Patent Agreements

Radio Corporation of America and Farnsworth Television and Radio Corporation announce that they have entered into patent license agreements, whereby each party has acquired the right to use the inventions of the other in the field of television and in other fields of their respective businesses.

RCA acquired a non-exclusive license under the patent of the Farnsworth Corp. for television receivers, for television transmitters and other radio and sound recording and reproducing apparatus.

Farnsworth acquired a standard-non-exclusive license for broadcast and television receivers and electrical phonographs under the patents of RCA and also other non-exclusive licenses for television and broadcast transmitters and for its other fields of business.

Neither corporation acquired any right to grant sub-licenses to third parties under the patents of the other corporation.

Commenting on the agreements, E. A. Nicholas, Farnsworth president, said,

"I believe the signing of the agreements constitutes an ethical milestone in the development of the electronic arts in this country. Not only will the television and radio industries be stimulated to further developments and refinements, but the ultimate result will be marked improvement of these great services for the American public."

Dealers Solve Trade-In Problem!

San Diego County, California dealers have worked out a plan through their Bureau of Radio and Electric Appliances whereby they recondition free of charge an old radio on the purchase of any console type radio or combination. They suggest to prospects that the old radio can be used in the children's room, the kitchen, workshop, etc. "Two radios for the price of one" is the theme used in large newspaper ads selling the need for two or more radios in the home.

The plan, writes J. Clark Chamberlain, is already accomplishing three things: encouraging the purchase of better radio sets; cutting down troublesome trade-ins; and helping convince people that more than one set is necessary.

Those already cashing in on the plan say it takes the pressure off the salesmen by permitting him to suggest reconditioning the old set, instead of having to jockey with the prospect as to allowance. They also report that it is saving them money since 10 per cent would usually be allowed for the useless radio on pur-

chase of a console, whereas the average cost of reconditioning and reinstalling the old set in the home is rarely more than \$5.

When the dealers find the old set will cost too much money to repair, the Bureau's answer is a classic. "I'm sorry, madam," say they, "but this old set is beyond repair; however, to carry out the spirit of the campaign, I'll be glad to take one of my own used radios on hand, recondition it, and give you two radios for the price of one."

Window cards, newspaper ads and radio-log booklets are distributed by the bureau as aids in contacting customers and advertising the campaign.

"Treasure Hunt" for Hidden Transmitter

Nearly one hundred ardent radio fans took to the field last month, with loop receivers in an attempt to locate a transmitter hidden within a 35-mile radius of Owensboro, Ky. The first car arrived at the transmitter in less than one and one-half hours after driving 32 miles. For those unable to locate the transmitter by radio means, the location was aired later in the day by the local broadcasting station. Amusements and refreshments were then served the treasure hunters. Occasion was the Eighth Annual Ken-Rad Treasure Hunt, September 10th.

CRYSTAL CONTROLLED MICROVOLTER, NO. 19X

Over 250 crystal controlled output from 100 KC to 150 megacycles, modulated and unmodulated, with accuracy better than .01%. Calibrated output in microvolts (0.5 to 100,000) from 100 KC to 30 megacycles. Self-contained vacuum tube voltmeter, power level meter and crystal. Power level meter has three decibel ranges from -6 to +38 db. Gain per stage, selectivity and sensitivity. Calibrated A.F. output 5. microvolts to 1 volt.



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OSCILLOGRAPH

Model RFO-4

For Complete Visual and Sound Signal Tracing in both RF and IF Stages—Single or consecutive stage by stage trouble shooting from the antenna post to the speaker.

These 16 Outstanding Features Give Full Use of Cathode Ray Tube

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| Video Amplifiers | Vacuum Tube Voltmeter |
| Demodulator | Signal Tracer |
| Frequency Modulated Oscillator | Variable Width Sweep |
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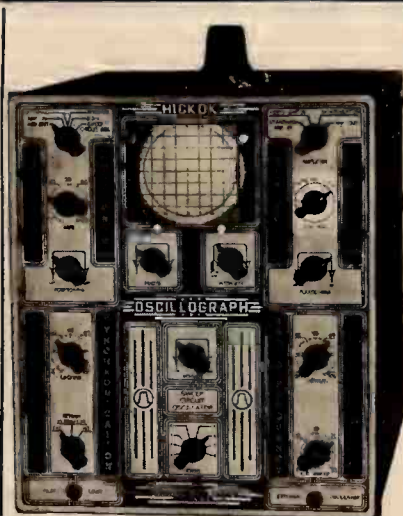
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BRAND NEW VACUUM TUBE VOLTMETER, Test Speakers, Set Testers, Zero Current Voltmeters, Crystal Controlled Signal Generators, Tube Testers, Crystal Controlled Multivibrators, Appliance Testers.

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THE STORY OF THE 7 WISE GUYS



WHO WERE LICKED BEFORE THEY STARTED

Seven blind fakirs tried to describe an elephant. One grabbed the tail and said: "It's like a snake."—Another felt an ear and said: "It's like a plant."—Another threw his arm around a leg and said: "It's like a tree." So—unable to see the whole big picture at one time they were licked before they started.

Today, there are servicemen equally blind, who think their business is the repairing of radios only. There are others who think that work on P. A. systems will offset the losses due to cheap receivers. There are others who think that television will be their salvation. The truth is that individually they are wrong—yet collectively they are right. The successful service business of tomorrow will do all those things—and more.—And, the serviceman who doesn't broaden himself to match the expansion of his industry will be licked by his own "blindness".

Be ready—know the fundamentals of your business—study up on the developments of tomorrow. Check the books listed below and order those you need TODAY!

New "SERVICING by SIGNAL TRACING" by John F. Rider

Use the system of servicing which is fastest—most modern—the system you can apply to all receivers regardless of age, type or make—independent of the kind of circuit or tubes used—independent of every limiting factor heretofore encountered. In this new book you learn what happens to the signal currents—the development of control voltages—and how all receivers are brought to a common servicing level. There is one thing that is common to every radio set—the signal. Read this book and you will be able to service the most complicated set with greater speed and less effort.

360 pages..... \$2.00

THE CATHODE-RAY TUBE AT WORK

This book has established itself as a standard work. It is the most complete and practical book ever written on the subject. If you want to be ready for television you must have the facts contained in this—the only book on the subject written especially for servicemen. Get it today!

336 pages—Over 450 illustrations..... \$2.50

"AN HOUR A DAY WITH RIDER" BOOKS ON AUTOMATIC VOLUME CONTROL. Will speed up your AVC work. 96 pages, 65 illustrations, hard cover..... 60c

ON RESONANCE AND ALIGNMENT. You need this book. Thousands sold! 96 pp., 48 illus..... 60c

ON D-C VOLTAGE DISTRIBUTION IN RADIO RECEIVERS. How d-c voltages are led to tube elements, etc. Full of facts you need. 96 pp., 69 illus., hard cover..... 60c

ON ALTERNATING CURRENTS IN RADIO RECEIVERS. With drawings and diagrams..... 60c

—AND REMEMBER...

You Need All 10 Rider Manuals
for Profitable Servicing

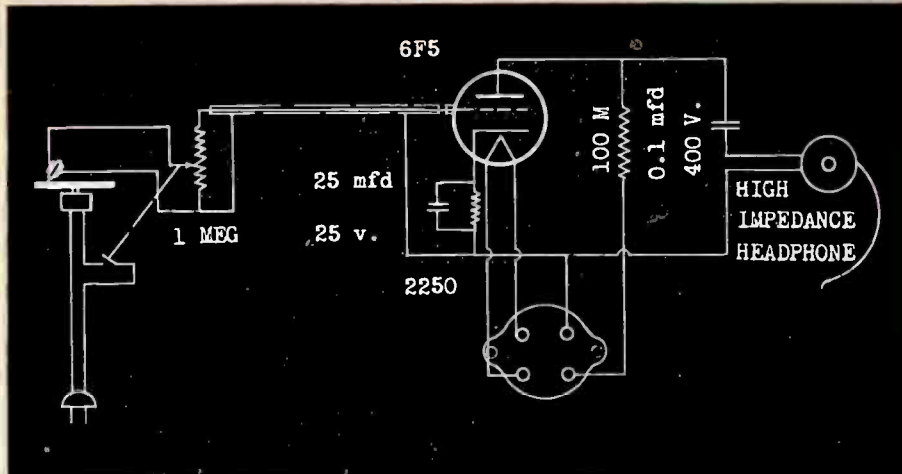
RIDER BOOKS

For Servicemen who
want to be "Ready"

JOHN F. RIDER, Publisher 404 FOURTH AVE.
NEW YORK CITY

LET'S LOOK AT

The Record



"Record listening-station" amplifier fits on shelf in counter. Clerk changes records and adjusts volume.

Record Listening Stations

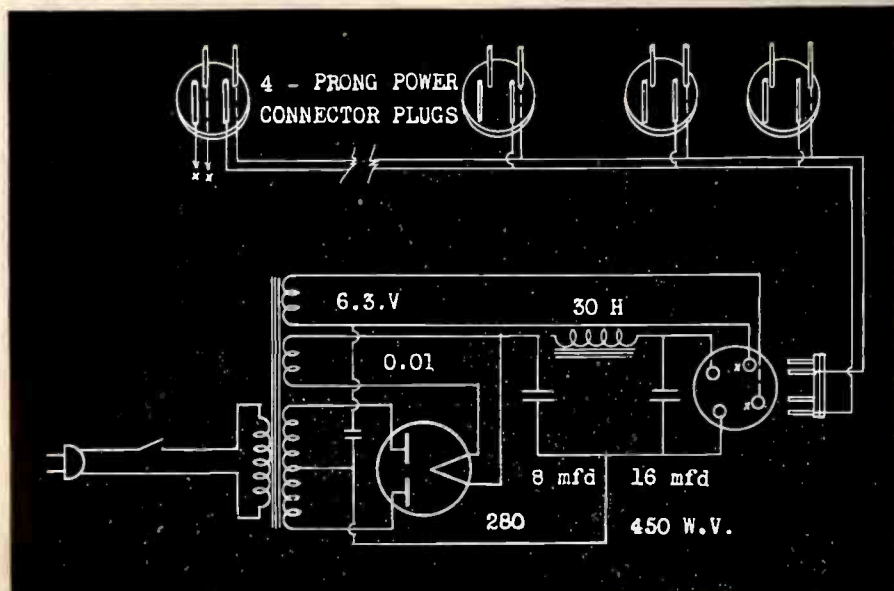
On other pages of this issue of RADIO TODAY, an inexpensive method of demonstrating records is shown. The wiring diagrams for the amplifiers and power supply used are shown on this page.

The turntable motor-board is designed to slide on rails and provide the maximum ease and speed to the clerk changing records. The vertical bulk-heads are spaced on 18-inch centers, and the number of tables per counter will depend upon the business transacted.

A high-gain triode is used as the amplifier tube to deliver a satisfactory signal to the crystal, or other high-impedance headphones. The large by-pass condenser in the cathode circuit

improves the quality of reproduction. The headphones are isolated from the DC plate voltage for user-protection. The grid lead from the pickup is shielded to keep motor disturbances out of the amplifier.

The power connections to the amplifiers are made with 4-prong plugs. The filament leads in the power cable should be twisted together. The plug on the end of the cable connects to the socket in the power supply chassis. The power supply is straight-forward and designed for quiet operation by using sufficient filter components. The tubes used are not the latest types but it is felt that the dealer is more apt to have these on hand. The transformer should deliver 300 volts DC at 40 ma., and 6.3 volts at 1.2 amps., in addition to rectifier-tube filament supply.



Common power supply for the amplifiers uses large filter to give hum-free reproduction.

Wax Worth Watching

JELLY ROLL MORTON and the New Orleans Jazzmen playing Winin' Boy Blues and Oh, Didn't He Ramble—Bluebird B10429.

JAN SAVITT and his orchestra playing The Paper Picker and It's a Hundred To One, both with VC by Bon Bon—Decca 2738.

EDDY DUCHIN and his orchestra playing I Must Have One More Kiss Kiss Kiss, with VC by Durelle, Johnny and trio, and What Is This Thing Called Love—Columbia 35204.

BEN BERNIE and his orchestra playing No Mama No and I'm Takin' My Time With You, both with VC by Bailey Sisters—Vocalion 5087.

SAMMY KAYE and his Swing and Sway orchestra playing My Prayer with VR by Clyde Burke, and If I Knew Then with VR by Tommy Ryan—Victor 26369.

HORACE HEIDT and his Musical Knights playing Start the Day Right with VC by Larry Cotton, Heidlites and Ensemble, and Stranger Things Have Happened, with VC by Larry Cotton—Columbia 35217.

CHICK BULLOCK and his Levee Loungers playing I Can't Tell Why I Love You But I Do and Sunbonnet Sue, both with VC by Mr. Bullock—Vocalion 5098.

MAXINE SULLIVAN with orchestra singing Sing Something Simple and Jackie Boy—Victor 26372.

BENNY GOODMAN and his orchestra playing I Didn't Know What Time It Was and Love Never Went to College, both with VC by Louise Tobin—Columbia 35230.

THE SMOOTHIES with orchestra singing It's Funny to Everyone But Me and Myrtle—Bluebird R10422.

ETHEL WATERS with Ed Mallory and his orchestra singing Push-Out and Bread and Gravy—Bluebird B10415.

Serious

TRISTAN UND ISOLDE—Isolde Liebestod—parts 1 and 2, Wagner—Kirsten Flagstad. Victor 8859.

BIZET—Carmen Suite—Sir Thomas Beecham and London Philharmonic Orchestra. Columbia Set X-144.

PETER AND THE WOLF—Prokofiev Op. 67—Koussevitzky and Boston Symphony Orchestra. Victor M-566.

HANDEL—Concerto Grosso No. 5 in D Major—Felix Weingartner and London Philharmonic Orchestra. Columbia Set X-142.

STRAWINSKY—Petrouchka—Leopold Stokowski and Philadelphia Orchestra. Victor M-574.

THE DONKEY SERENADE—Giannina Mia—Harbach—Frinl. Allan Jones. Victor 4380.

ALBUM OF VICTOR HERBERT MELODIES—Victor Salon Group and orchestra. Victor 12589-12593.

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RICH WARM 100% WOOL BLANKETS



• These warm, long wear blankets are first quality 100% virgin wool, beautifully bound with satin. Available in a variety of modern colors. Size 72" x 84". Dealer Deposit \$4.00 Retail Value \$12

FAMOUS MARLIN SHOTGUNS



Retail Value \$39.90

• Marlin's great Over & Under Shotgun available in 12-16-20 gauges and .410 bore. A perfectly balanced, easy handling gun, strongly built. Positive automatic safety. . . . Approximate weight, 12-gauge, 7½ lbs., 16 and 20-gauge, 6¼ lbs., .410 bore, 5¼ lbs. Dealer Deposit \$22.50

ELGIN WATCHES



Retail Value, \$37.50

• Ladies ELGIN DE LUXE wristwatch, semi-baguette, 17 jewels, 10K gold filled case. Or man's CRUSADER 8/0 size, 17 jewels, 10K natural gold filled case. Dealer Deposit \$11.00

ROGERS SILVERWARE

Retail Value, \$60.00



• 87-piece service for 8 persons in Good Housekeeping approved tarnish proof, fine wood chest. Encore design. Made and guaranteed by Simeon L. & Geo. H. Rogers Co., famous Oneida silversmiths. Dealer Deposit \$12.00

IT PAYS TO HANDLE NATIONAL UNION

Radio Tubes and Condensers



SERVICE DEALERS!

Do you want to increase your volume, give better satisfaction to your customers, protect yourself from cut price competition . . . THEN WHY NOT WORK WITH N.U. . . . All our policies and sales promotions are aimed to build up you and your business. National Union offers a complete line of all (320) types of tubes. Quality is the finest that research skill and engineering can produce; backed by the most liberal replacement policy in the industry. The choice of leading service engineers everywhere . . . they've got to be good!

CERAMITE CONDENSERS

The only midget electrolytic encased in ceramic insulation.  Can't short when jammed in tight places. Competitively priced. Available in all popular capacities and voltages.

NOTICE!

There is no truth to the rumor that National Union is going to discontinue premiums. A movement is on foot to try to persuade your jobber to discontinue giving you equipment with your tube purchases. National Union's plan is benefiting thousands of service dealers. Tell your distributor—"We want National Union offers continued!"

RT-1039

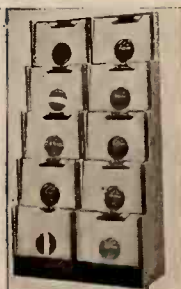
Ask Your Jobber or Write NATIONAL UNION RADIO CORP. 57 State Street, Newark, N. J.

BITTER

Brings You a Bigger NET from Record Sales

MERCHANDISER No. 2S →
For display or storage. Sets on counter or hangs from wall. Sheet steel, sprayed Duco finish walnut color. Holds 140 10" records. 21" long, 37" high, 9" deep. Price \$6.25 Boxed F.O.B. Factory.

CABINET No. 100
May be used independently or as a unit of a large record department. Outside facings of birch finished in walnut. Recessed ebonized maple base. Dustproof construction. Holds 500 10" and 500 12" records and 75 album sets. 2' 10½" long, 7' 2" high, 14½" deep. Price \$44. Un-crated F.O.B. Factory.



Standardized, economical equipment for greater efficiency in selling records, albums, etc. Write for free folder showing full line.

RECORD BOOTH B-1

Standard Construction.

Built of completely standardized sectional units which can be readily rearranged or added to as the need arises. Made of kiln dried birch. Finished in walnut mahogany or a painted finish. Can be readily converted into dark room for use in demonstrating television sets.

RECORD MERCHANDISING EQUIPMENT

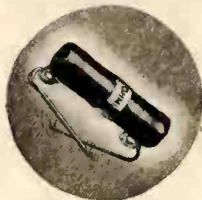


A. BITTER CONST. CO., 2701 Bridge Plaza North, Long Island City, N. Y.

SERVICEMEN EVERYWHERE

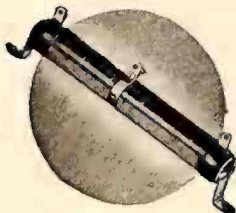
*Depend on
Ohmite
Resistors*

Ohmite Brown Devils



Popular, time-proved, extra-sturdy wire-wound resistors for voltage dropping, bias units, bleeders, etc. Built right and permanently protected by Ohmite Vitreous Enamel. 10 and 20 watt sizes; 1 to 100,000 ohms.

Ohmite Adjustable Dividohms



Mighty handy for quick replacement or change of resistance value. Easily adjusted to exact resistance—or tapped where needed. Ideal voltage dividers. Ratings from 10 to 200 watts. Resistances up to 100,000 ohms.

Get Ohmite Parts from Your Jobber
Send now for free Ohmite Catalog 17

OHMITE MANUFACTURING CO.
4873 Flournoy Street, Chicago, Ill.,
U. S. A.

Send FREE CATALOG 17.

Name
Address
City State
Occupation RT-10

OHMITE
RHEOSTATS RESISTORS TAP SWITCHES

War Creates Boost in Parts Trade

That the war will be responsible for a big boost in the radio parts trade is the opinion of Charley Golenpaul, jobber sales head for Aerovox Corp.

"In addition to the accepted use of radio as home entertainment, the average set is now operating many extra hours a week for news bulletins," says Charley. "As a result we have been receiving a greater volume of jobber orders this past couple of weeks. Increased radio listening time is certain to call for more replacements, with a nice business increase for serviceman, jobber and manufacturer" thinks Golenpaul.

Graybar Now Jobbers for Majestic Territories

Majestic Radio and Television Corp. have appointed the Graybar Electric Co. as exclusive distributors of Majestic radios in Wichita, Kan.; Kansas City, Mo., and Akron, Toledo, and City, Mo., and Akron, Toledo, Cleveland, Ohio, and Oklahoma City.

Harry J. Erskine Dies After Appendectomy

Henry J. Erskine, son of B. G. Erskine, president of Hygrade Sylvania Corp., died Saturday, October 7th after an appendicitis operation. He was twenty-one years old.

The young Mr. Erskine attended Pettie Prep School in Pennsylvania and was, at the time of his death, preparing to return to his studies at Cornell University.

G.E. Rally in Milwaukee

A meeting of over 400 radio dealers from all parts of Wisconsin attended a General Electric radio dealers rally in Milwaukee last month to present the new line and discuss the advertising and promotion plans for 1940. The complete new line of G. E. sets was presented by George Devine, factory representative, features were compared with other lines by T. F. Hall, G. E. merchandising department, and factory rep Ray Cochran gave the sales promotion and advertising story. After the meeting the entire group was

served with a buffet lunch and refreshments. J. E. McNaughton, sales promotion manager, reports considerable volume of business realized by L. D. Morgridge, appliance sales department manager, and his men.

Fry & Roberts Now Triumph Reps

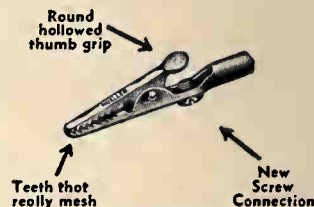
Triumph Mfg. Co., manufacturers of commercial radio testing apparatus have announced the appointment of Fry & Roberts, 2412 W. Seventh St., Los Angeles, as west coast representatives in the states of California, Arizona, Nevada and Utah. Plans have been completed for opening a San Francisco office November 1st.

MUELLER

Presents—

A Complete New Line of ALLIGATOR CLIPS

IMPROVEMENTS!



6 — NEW CLIPS — 6

All Popular Types, Insulated
or Uninsulated, and a
UNIQUE, SOLID COPPER
R.F. ALLIGATOR!

SEND FOR FREE SAMPLES
AND SHEET 702

Mueller Electric Co.

1573 E. 31st St. Cleveland, Ohio

PAR-METAL PRESENTS

RACKS • CHASSIS • PANELS IN A GREAT NEW 1940 CATALOG

When you build your next transmitter, amplifier, public address system, exciter kit, frequency meter . . . or any other job, be sure you use Racks, Panels and Chassis by PAR-METAL. It's the most widely publicized line and is specified in constructional articles more frequently than any other line. The Reason: Highest quality, beautiful streamlined design and popular price.

OUR NEW CATALOG is now ready. It describes the most complete line in the industry. Two big sections: Amateur and Commercial—devoted to relay racks, enclosed racks, transmitter racks, all purpose metal cabinets, several new types of rack panels, speaker cabinets and new models of amplifier foundation chassis. Many new De Luxe chromium trimmed, streamlined models in both black or grey ripple finish are included.

PAR-METAL PRODUCTS CORP. 3521 41ST STREET
LONG ISLAND CITY, N. Y.

LETTER BRINGS IT FREE



News of "The Representatives"

At the September 12 meeting, "The Representatives of Radio Parts Manufacturers" elected an out-of-town president, S. K. MacDonald of Philadelphia. One of the features of the 1939-40 program will be to foster greater activity among members of the organization outside of New York City. Other officers elected at the meeting were: Pres. S. K. MacDonald, 1343 Arch Street, Philadelphia, Pa.; Vice-Pres. Martin Camber, 30 Dongan Place, N. Y. C.; Sec'y-Treas. David Sonkin, 220 East 23rd Street, N. Y. C. (re-elected).

Plans were discussed for the year's activities and given over to the newly formed committees for individual action.

The newly-appointed Board of Governors: Dan R. Bittan, chairman, 53 Park Place, N. Y. C.; Perry Saffler, 53 Park Place, N. Y. C.; Adolph Friedman, 220 East 23rd Street, N. Y. C.; Leo Freed, 1150 Broadway, N. Y. C.; I. Golden, 453 Broome Street, N. Y. C.

Membership committee: Irvin Nevins, chairman, 53 Park Place, N. Y. C.; Ben Joseph, 1440 Broadway, N. Y. C.; Adolph Friedman, 220 East 23rd Street, N. Y. C.; Leroy Schenk, 57 State Street, Newark, N. J.; Hy Steinberg, 423 Broome Street, N. Y. C.

Entertainment committee: Marty Camber, chairman, 30 Dongan Place, N. Y. C.; Jules Sussman, 220 East 23rd Street, N. Y. C.; Jack Sharf, 152 West 42nd Street, N. Y. C.

Publicity: C. B. Cooper of Cooper-DiBlasi, 91 Seventh Avenue, N. Y. C.

New members elected include: Sigmond H. Cohn, 2523 South Hill Street, Los Angeles, Calif.; Wm. E. McFadden, 915 Montrose Avenue, Columbus, Ohio; Bruce L. MacPherson, 1919 Wells Street, Fort Wayne, Ind.; Milton Shapp, 4036 Walnut Street, Philadelphia, Pa.; Henry W. Burwell, 415 Peachtree Street, N. E., Atlanta, Ga.; James Millar, P. O. Box 116, Station C, Atlanta, Ga.; Edwin Guinness, 373 Washington Street, Boston, Mass.

New Jobbers for Stewart-Warner

Recent additional radio distributorships announced by L. L. Kelsey, radio sales manager for the Stewart-Warner Corporation are: H. J. Sackett Electric Company, Buffalo, N. Y.; C. T. Berner Distributors, Dayton, O.; Falheim Lumber Company, Erie, Pa.; The Hibbs Hardware Company, Portsmouth, O.

The distribution territory of Brown-Dorrance Electric Company, Stewart-Warner radio distributors in the Pittsburgh area, has been expanded to include Wheeling, West Virginia, and vicinity, Kelsey announced.

Ansley Record Cabinets

Two record cabinets, the "Modern" and the "Kent" have been presented by the Ansley Radio Corp. The "Modern", built of real walnut and designed to hold a small combination with records below, lists at \$19.50. The "Kent", model is made in 18th Century period design in garnet mahogany. List price is \$29.50.



Profit is made on turnover
NOT LEFTOVERS



Profit is made on turnover—not leftovers. And what's the secret of turnover . . . fast turnover? A product with a following . . . proved in reliability. And behind the product, a reliable company . . . wise in experience. Cornell-Dubilier capacitors sell faster because they are backed by a company 29 years "at it" and recognized for Consistent Dependability the world over. You can profit by standardizing on the complete line of Cornell-Dubilier Capacitors, Capacitor Test Instruments and Quietone Interference Filters. Available at all leading distributors.

Catalog No. 175A free on request.

Product of the world's oldest and largest manufacturer of capacitors.



**CORNELL-DUBILIER
ELECTRIC CORPORATION**

1019 Hamilton Boulevard, South Plainfield, New Jersey
Cable Address: CORDU

**A GOOD NAME
GOES A LONG WAY**

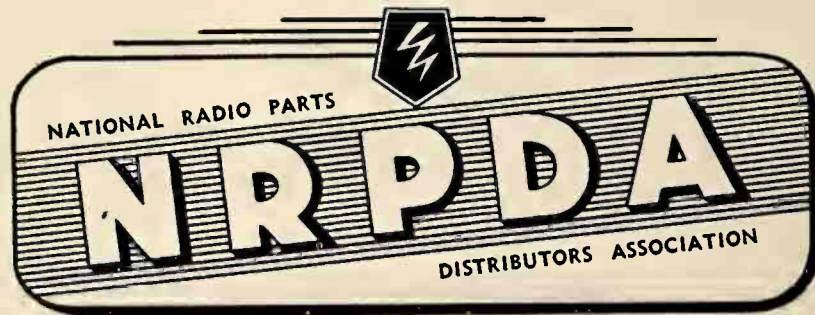


The good name of Ken-Rad Radio Tubes is due to the highest standards of quality in manufacture and performance.

KEN-RAD TUBE & LAMP CORP.
OWENSBORO, KY.

Export Dept.
116 Broad St., New York, U.S.A.
Cable Address: Minthorn, New York

★ **KEN-RAD** ★
DEPENDABLE RADIO TUBES



THE MARK OF AN ETHICAL MERCHANTISER OF ADVERTISED RADIO BRANDS

Here is a symbol which bears watching. It is your safeguard against practices which have tended, in the past, toward taking away profits which are legitimately yours.

Dealers and Servicemen who have had to contend with destructive practices in the past, will welcome the opportunity which is now afforded them to help eliminate these practices. NRPDA Jobbers are merchandisers of nationally advertised radio brands. They are jobbers who are interested in Industry problems which affect your business. In short, NRPDA members recognize their responsibility to you.

That is why we urge you to deal with jobbers who display the NRPDA symbol. There's an NRPDA Member in your territory Address the Executive Secretary for his name.

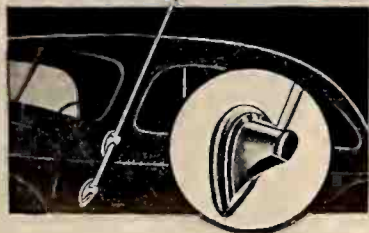
NATIONAL RADIO PARTS DISTRIBUTORS ASSN.

TEMPORARY OFFICE OF THE EXECUTIVE SECRETARY

5 WEST 86th STREET

NEW YORK, N. Y.

BRACH AUTO AERIALS



*Radio's Smartest Auto Aerials
Are Made by Brach*

New streamline design; smooth, noiseless; anti-rattle construction. Made of chrome-plated Admiralty brass. Approved and recommended by leading auto manufacturers.

See our new 92-inch Cowl Aerial with concealed mounting insulators.

*Send for Latest Catalog
Covering Complete 1940 Line*

L. S. BRACH

MANUFACTURING CORPORATION

World's Largest Makers of Antenna Systems

55-67 DICKERSON STREET NEWARK, N. J.

NEW

RADIO PARTS CATALOG

COMPLETE STOCK
One of the largest
in existence.

SAME DAY SERVICE
Your order goes
through immediately.

MONEY BACK GUARANTEE You take no chance when
you buy from Wards.

EASY PAYMENTS ON EVERYTHING

MONTGOMERY WARD

9 Great Mail Order Houses
More Than 600 Retail Stores

Montgomery Ward & Co.
Dept. RT-31, Chicago, Ill.
Please RUSH me your FREE
Radio Equipment Catalog.



Name.....

Address.....

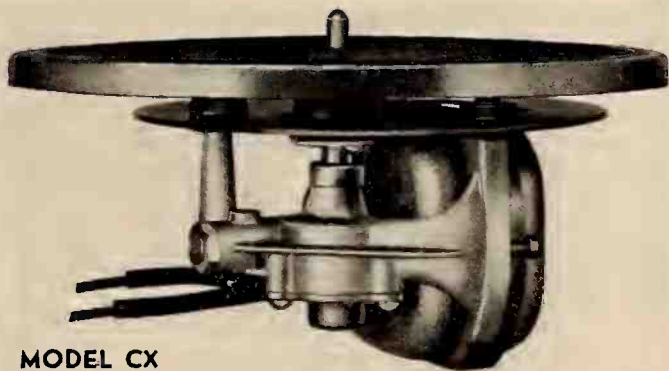
City..... State.....

IT is an unusual new type of Parts Catalog. Imagine being able to compare side-by-side all the important Signal Generators on the market without thumbing through a dozen pages or catalogs! This practical new way of presenting test equipment is only one feature of this NEW complete catalog. It contains Sound Equipment for every purpose. From the new one-piece "Orator" to the largest 100-watt sound system for stadiums.

We have a copy for every Serviceman in the business. If you have not received your copy mail coupon today.

USE THESE LIGHT "X" Series PHONOGRAPH MOTORS In Low-Cost Installations

DEVELOPED by General Industries Co. for maximum strength consistent with new lighter weight, constant speed and silent operation. *Low in cost*, ideal for use in popular-priced portable phonographs, table models and radio-phonograph combinations. Order motors to test, stating voltage and frequency of current you use and size turntable wanted.

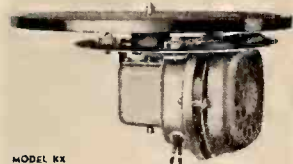


MODEL CX

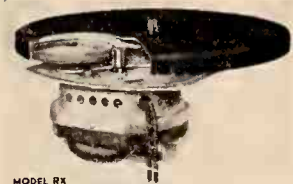
Model CX—Direct drive, self-starting induction type motor. Fan-cooled. Fully enclosed, with silent helical-cut gears running in oil bath in sealed housing. Double-insulated drive sleeve. Delivered ready to install. Choice of 8", 9", 10", or 12" turntable.

Model KX—Similar to CX, but lighter, smaller and lower in price. Comes complete with mounting plate and turntable, ready to install.

Model RX—Rim-drive unit with self-starting induction-type motor, rubber insulated. Quiet in operation. Driving pulley, idler and turntable positively aligned in one plane, assuring efficient, trouble-free performance. 8", 9", or 10" turntable included. Shipped ready to install.



MODEL KX



MODEL RX

Get Our New Catalog!

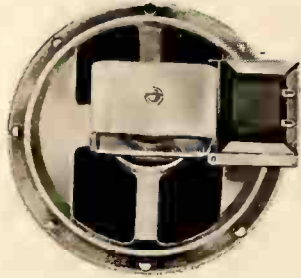
For latest catalog of all types of General Industries electric and spring-wound phonograph motors and automatic record changers, address



The GENERAL INDUSTRIES CO.

3938 Taylor St., Elyria, Ohio

CRESCENT



SMALL SPEAKER SPECIALISTS

Crescent Speakers are now available for jobbers and servicemen as well as manufacturers of radio receivers and intercommunicating systems.

Permanent Magnet and Electro Dynamic featured in three sizes— $3\frac{1}{2}$, 4 and 5 ins.

Constructed of the finest materials available. Outstanding in quality, performance and dependability.

PRICED TO MOVE

TERRITORIES AVAILABLE FOR JOBBERS

Write now to

CRESCENT TOOL & DIE CO.
4140 BELMONT AVE. • CHICAGO

New Booklets

"Radio Capacitors for all Requirements" is title of new 16-page catalog issued by Cornell-Dubilier Electric Corp., South Plainfield, N. J.

Two new bulletins illustrate and describe new L-C checker, and capacity-resistance bridge. Both bulletins obtainable from Aerovox Corporation, New Bedford, Mass.

New leaflet describing battery cables for emergency car starting service. Mueller Electric Co., 1583 E. 31st St., Cleveland, Ohio.

Catalog of new products of Radio Mfg. Engineers, Inc., 111 Harrison St., Peoria, Ill.

Characteristics of 584 tubes are included in new handbook available from National Union Radio Tube Corp., distributors.

Test and service equipment catalog shows the complete 1940 line of Earl Webber Co., 1313 W. Randolph St., Chicago.

Technical manual of 264 pages gives complete characteristics of 344 tubes. Hygrade-Sylvania Corp., 500 5th Ave., New York, N. Y.

Catalog of 1939-40 test equipment gives instrument specifications and uses. Copy of No. 121 may be obtained on request from Radio City Products Co., 88 Park Place, New York, N. Y.



- ★ Heat any power resistor red hot by several hundred per cent overload. Plunge into cold water. Repeat several times. Then examine coating for cracks, flaking, peeling. Compare with CLAROSTAT "Greenohm" cement-coated power resistor undergoing same heat-shock test. It's just one of several ways of getting to know how tough modern resistors can be.
- ★ Insist on "Greenohm" CLAROSTAT power resistors for a trial at least. 10 to 200 watts, 1 to 150,000 ohms, fixed or adjustable.

CLAROSTAT MFG. CO., INC.
285-7 N. Sixth St. Brooklyn, N. Y.



Mr. Serviceman:
"Be First
with R.S.A.!"



Let's Grow Together in 1939!

MAIL THIS COUPON NOW!

RADIO SERVICEMEN OF AMERICA, Inc.
304 S. Dearborn St., Chicago, Ill.

Name

Address

City..... State.....

I am interested in RSA membership. Tell me about it.....

I am enclosing \$4.00 for National dues and initiation.....

(Does not include Local Chapter dues where Local Chapters are organized.)

RT-1039

HISTORY MAKING FIRSTS

FIRST and only national service organization to have sponsorship of RMA, Sales Managers Club, and all radio trade journals.

FIRST national service organization to have bonded employees and officers—with a democratic setup run entirely by servicemen elected by and from the membership.

FIRST service organization to have a cooperative agreement with broadcasters to sell RSA to the American public and to put into effect plans for making the service industry a profitable, year-round business.

FIRST and only service organization to provide a Guaranteed Service Plan for protection of its members and their customers.

RADIO SERVICEMEN OF AMERICA, Inc.

JOE MARTY, JR., EXECUTIVE SECRETARY
304 S. DEARBORN STREET, CHICAGO, U.S.A.

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While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this index.

US Record Issues New Releases

Hits from two shows and a movie are included in a group of popular, standard, foreign and Christmas records available after October 12 from United States Record Corp. Prominent in the popular and standard lists are: "Music in My Heart," played by Johnny Green and orchestra; "Ah! Sweet Mystery of Life," featured in the new picture "Gay Days of Victor Herbert" and played by Richard Himber's orchestra; and "Lilacs in the Rain" with "Table in the Corner" on the reverse, orchestrated by Johnny Messner.

Hillbilly and special operators records are also listed.

Small Combinations Help Console Sales

The return of recorded music to almost universal popularity can immensely increase the sale of radio-phonographs, not only as the chief source of radio and recorded entertainment in the home but as an auxiliary, states John F. Gilligan, manager of Philco's specialty division.

"A large market, beginning to open up, has previously been overlooked," commented Gilligan. "The table-type of radio-phonograph is ideal as the second set in the home. Much has been said about the desirability of having a radio in the average home's bedroom. To most people interested in recorded music, it would be more desirable to have a small radio-phonograph in the den or other rooms.

"There would then be no need to restrict record-playing to the living-room. In fact, there is no reason why record-enthusiasts should not want to listen to records in comfort and in various parts of the house as much as they want to listen to radio.

"The answer," said Gilligan, "is the small radio-phonograph. It not only fills a need and stimulates its own sales, but it stimulates the sale of larger combinations to those who do not already have them. If they buy a table model radio-phonograph for auxiliary use, it is almost certain they will soon want a larger more fully-toned model for use in the living-room."

N. U. Foto Log

Third edition of National Union's "Radio Foto Log" was made available this month to retail service dealers. A radio map shows locations of principal broadcasting stations in Europe and a list provides information for short wave listeners and names of news commentators in U. S. and Europe.

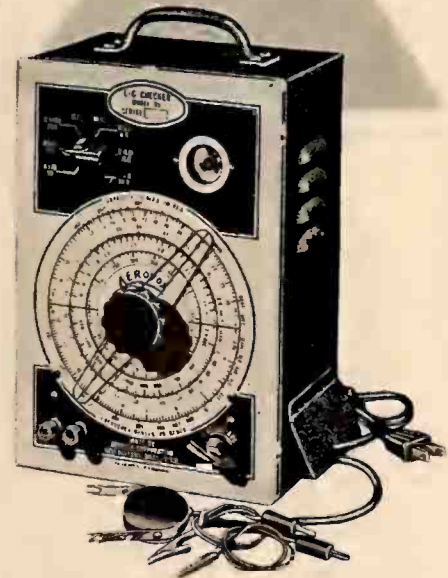
The book includes photographs of more than 300 radio performers, station listings in U. S. and a list of television stations. The Foto Logs are available through N. U. distributors at \$2.90 per hundred with slight additional charges for imprinting in various quantities.

A football scoreboard sign in black, green and white on 28 gauge steel, 20 x 28 inches may be obtained from jobbers at \$.50 each.

Test them at work!



with
the
**L-C
CHECKER**



• Just imagine testing condensers right in their own circuit—no disconnecting, no unsoldering. A truly radio test, which checks for capacity, opens, shorts, intermittents.

The L-C Checker does a score of things. Checks inductances and circuits, aids align r.f. and i.f. stages; tunes traps; checks chokes, natural period of antenna and transmission lines, etc., etc. Yet it costs only \$29.50 net.

Ask to See It...

• Your local AEROVOX jobber will gladly show you the L-C Checker. Ask for data—or write us direct.



CONSOLIDATED CONDENSERS

Insist on them for

QUALITY at LOW PRICE



**Dry-Electrolytic
By-Pass
Special
Assortments**

Shown at Left

**Inverted Type Dry-Elec-
trolytic in Metal Con-
tainer with Lock - Nut
Mounting**

There is a Consolidated Condenser for your every need—or a special assortment of these condensers to take care of your most frequent requirements. Save money with these top quality condensers at low prices.

See Them at Your Parts Jobber's Today!

CONSOLIDATED
WIRE AND
ASSOCIATED
CORPORATIONS

516 S. Peoria St. Chicago, Ill.

Majestic Promotes Byrne; Appoints Van Horn



H. T. Byrne, Asst. Gen. Mgr.,
Majestic.

Harry T. Byrne has been advanced to the position of assistant general sales manager of Majestic Radio and Television Corp., and will work closely with W. B. E. Norins, general sales manager, in the expansive sales schedule now in operation. Byrne is a veteran in radio experience and for the past several years has handled executive positions in merchandising, sales promotion and sales management.

J. P. vanHorn has been appointed advertising manager in another move of Majestic re-organization plans. Van Horn has had wide experience with distributor-dealer organizations, having been engaged in sales promotional and advertising activities for national manufacturers. He is a former newspaper advertising man and advertising agency executive.

Lewis to U. S. Record

United States Record Corp., manufacturers of Varsity and Royale records, recently announced the appointment of William R. Lewis as regional sales manager. Lewis takes over the middle western territory making his headquarters in Chicago. For many years he has been in close touch with the record and radio industries as sales executive for Victor Talking Machine Co., Southern Wholesalers, Washington, D. C., and G.E. Supply Corp., Baltimore.

Stromberg Adds More Dealers

Since introduction of the 1940 line of Stromberg-Carlson radios last May, half again as many dealers as in 1938 have been signed, according to Lee McCanne, Stromberg-Carlson radio sales manager. Commenting on the increase McCanne said, "The 49 per cent increase in dealers may be attributed to the opening of distributorships in territories not previously represented by Stromberg-Carlson, and to the increased acceptance of the line because of greater values."

SPRAGUE ATOMS

"Mightiest Midgets of All"

YOU SAVE 2 WAYS!

Sprague ATOMS (Midget Etched Foil Dry Electrolytic Condensers), save you a whale of a lot of money—and they save space, too! You'll find them far better than most of the big old-style electrolytics for which they are used as universal replacements. Not a "blow-out" in a carload. Unquestionably the highest quality midgets—the smallest midgets—and the only midgets made in a full line of dual capacity combinations with common negative leads. Write for catalog. See your jobber today!

HOW'S THIS FOR VALUE?

This dual 8-8 mfd. 450 V. ATOM is only 1" x 2 5/8" and lists at only \$1.00. A single 8 mfd. ATOM lists at 60c.



SPRAGUE
450 VOLTS

SPRAGUE PRODUCTS CO.
North Adams, Mass.

READY NOW!



**ALLIED'S
1940 RADIO
CATALOG**

- ★ 204 PAGES
- ★ 5 SECTIONS
- ★ 15,000 ITEMS

1. NEW SETS

60 Sensational, new sets, 4 to 12 tubes, all types, latest portables, phonographs, record players, phono-radios—ultra modern styling.

2. NEW P.A.

3 completely new lines—14 new systems 6 to 70 watts, new styling and performance—new accessories, latest recording equipment. New Time Payment Plan!

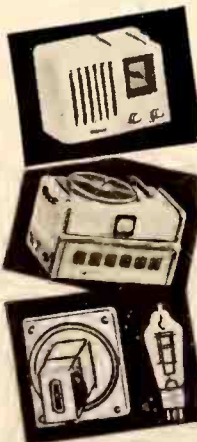
3. NEW HAM GEAR

Newest receivers, Skyrider "Defiant," Television. Rotary Beam Equipment, etc. All leading standard lines. Most complete section in Radio.

4. PARTS SECTION

15,000 Radio parts for every requirement. Everything new in accessories—books, tools, tubes, kits, and a complete line of Test Equipment—all at Lowest Prices!

5. BARGAINS! 8 Pages



Free

ALLIED RADIO CORP.
833 W. Jackson Blvd.
Chicago, Ill., Dept. 15-K-0
Send your new FREE 1940 Catalog.

**SEND
COUPON**

Name
Address

MUSICAL TOWERS

More business . . . Handsome Profits

If you specialize in sound installations . . . can handle a new idea in a virgin and unworked field you'll click with the SUNCO MUSICAL TOWERS. Get the facts on how to sell and service this complete amplifying system for tower and belfry chime installations.



The Sunco "MASTER" is a custom-built, quality instrument! Broadcasts chimes, organ recordings. Powered up to 12-mile diameter coverage. Also used as a P.A. unit. Automatic record changer. Plays 10" or 12" records mixed. We furnish everything—speakers, accessories, installation and service directions. Sales Help! New low-noise acetate discs for church services. Protected territory for those that qualify. This is a money-making OPPORTUNITY. Write or wire today.

SUNDT ENGINEERING COMPANY
4763 Ravenswood Ave., Chicago, Illinois

Sell & Use LITTELFUSES



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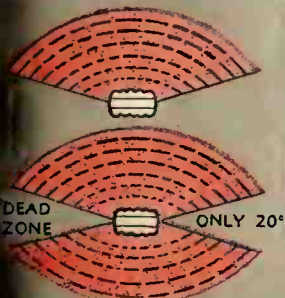
AMPERITE

gives you **THE ACOUSTIC COMPENSATOR**
and these **5 VITAL FEATURES**



PUSH UP TO INCREASE HIGHS; PUSH DOWN TO INCREASE LOWS.

UNI-DIRECTIONAL COMPENSATOR UP



BI-DIRECTIONAL COMPENSATOR DOWN

- (1) It's a VELOCITY . . .
- (2) It's a DYNAMIC . . .
- (3) It's UNI-DIRECTIONAL . . .
- (4) It's NON-DIRECTIONAL . . .
- (5) Gives HIGH OR LOW PITCH.

These EXTRA features are made possible by the patented Acoustic Compensator. By moving it UP, you change the Amperite Velocity to a DYNAMIC microphone without peaks. At the same time you reduce the back pickup, making the microphone practically UNI-DIRECTIONAL.

With the Compensator DOWN, the microphone is BI-DIRECTIONAL: Contrary to popular conception, it has a wider pickup angle without frequency discrimination than any other type microphone . . . Turning the microphone parallel to the ceiling makes it NON-DIRECTIONAL.

THE ACOUSTIC COMPENSATOR is standard on these models: RBHk (hi-imp); RBMk (200 ohms), with Cable Connector and Switch . . . Chrome or gunmetal, LIST \$42.00
RSHk (hi-imp), RBSk (200 ohms) with Cable Connector and Switch . . . Chrome or gunmetal, LIST \$32.00

GREAT VALUE at \$22.00 Model RAH (or RAL)



Excellent for both speech and music . . . Reduces Feedback . . . Gives flat response without undesirable peaks . . . Amazingly rugged. Frequency range 60 to 7500 CPS. Output, -68 db.

MODEL RAH (hi-imp) with 12' of cable; MODEL RAL (200 ohms) with 8' of cable . . . LIST \$22.00

AMPERITE KONTAK MIKE Puts Musical Instruments Across with Sensational Effect!

So beautiful is the tone produced with the aid of the Kontak Mike, that it was used in the Philadelphia Symphony to amplify a mandolin solo.

MODEL SKH (hi-imp); SKL (200 ohms) LIST \$12.00; plug extra. List \$1.50. MODEL KKH has HAND VOLUME CONTROL . . . LIST \$18.00; plug extra. List \$1.50. FOOT PEDAL for making beautiful crescendos. LIST \$12.00.



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With the Amperite Boosting Transformer and the high output KONTAK MIKE (Model SKH, list \$12.00) you can amplify any stringed instrument at home, through the radio or record player. Simple installation. BOOSTING TRANSFORMER, Model BT, LIST \$3.

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- (1) FREE Window Decal advertising your Sound Service. Size 5 1/4 x 9 1/4, finished in 4 colors.
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 "SALES-MAKER" DISPLAY!**

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